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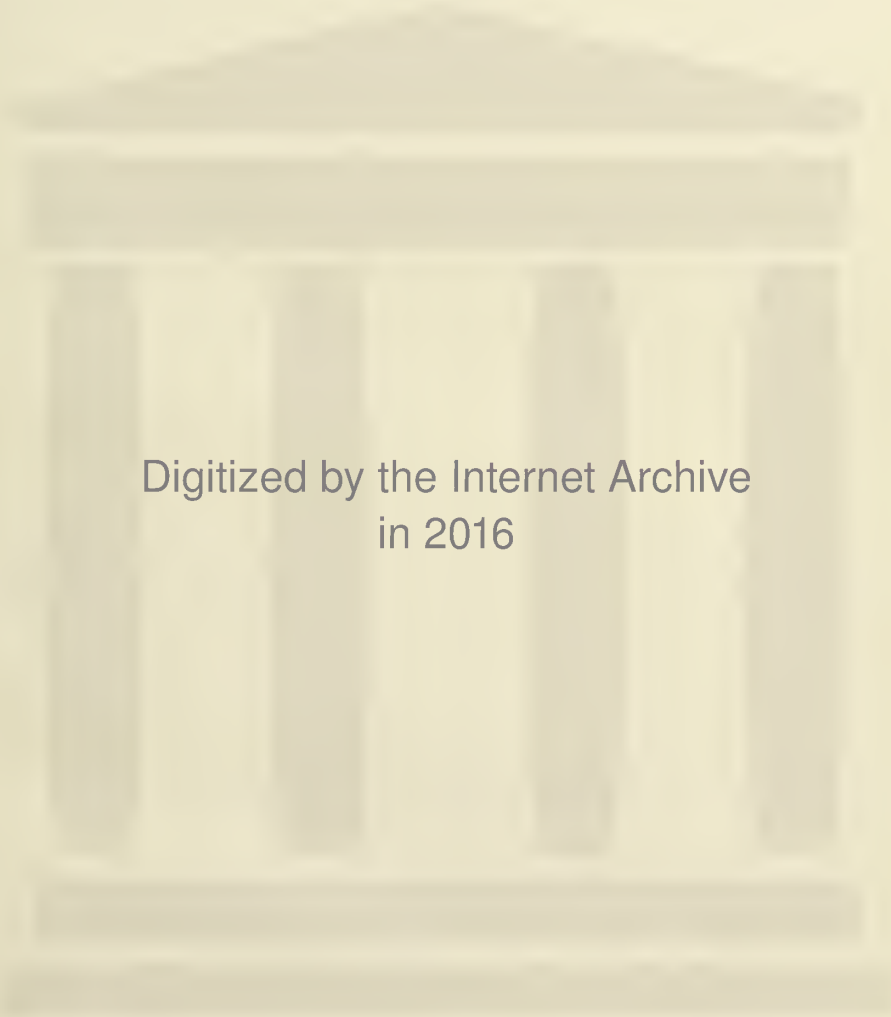
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# THE JOURNAL

or

## THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

and of

### THE STATE BOARD OF HEALTH

OWNED AND PUBLISHED JOINTLY EACH MONTH BY THESE TWO AGENCIES

Vol. 1, No. 1

Montgomery, Alabama

July 1931

*The President's Message*  
*The Jerome Cochran Lecture*  
*Plants Causing Hay-Fever in Alabama*  
*Fifty-eighth Annual Report of The Board*  
*of Censors*

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# THE JOURNAL

OF

The Medical Association of The State of Alabama

AND OF

The State Board of Health

Vol. 1, No. 1

Montgomery, Alabama

July 1931

## THE PRESIDENT'S MESSAGE\*

W. G. HARRISON, M. D., Birmingham

The average physician is in active practice less than three and a half decades. It is no insignificant distinction to be one of thirty-five chosen from its entire membership to preside at a meeting of the State Medical Association. I am fully conscious of the honor accorded and beg you to accept every assurance of my genuine appreciation.

On this occasion inclination persuades, and custom seems to command, that we praise our past achievements and magnify our present pre-eminence.

Our Constitution directs that the President shall deliver "a message devoted to a discussion of the interests, organization, objects or business of the Association." What a gracious forethought by the authors of our Constitution. They evidently knew the garrulous weakness of all men beyond the fifth decade and were familiar with the physician's "bent for counsel." What privilege more precious than to force on his own profession advice hitherto imposed on his helpless patients! It was this tendency referred to by old Robert Burton in his "Anatomy of Melancholy":

"Who can not give good counsel?  
'Tis cheap; it costs him nothing."

\*President's address before the Association at the Sixty-fourth Consecutive Annual Session, Birmingham, April 21, 1931.

## "BON VOYAGE"

Deal kindly, gentle reader and fellow member, with this our maiden effort. The field of journalism is for us still an uncharted sea. May we ask that you carefully scrutinize your "first born" from cover to cover and send in to its "god-parents" such constructive suggestions as will speed up a lusty growth.

Cochran planted; Sanders watered, and Welch witnessed a glorious increase. What of the present? I congratulate the Association upon its selection of a health officer last year and sincerely believe the future will demonstrate his achievement as equal to that of his predecessors. Alabama's experience amply illustrates the fact that success of a public health officer depends upon character, culture, intelligence, tact and sympathetic understanding of our system, rather than upon a narrow technical training.

I have spent one day in the offices of the State Health Department at Montgomery, have attended seven divisional meetings, have earnestly interviewed about a hundred physicians throughout the State, and have tried to appraise some of our present problems. After mature deliberation, I have reached only two definite convictions. First, the more one studies these problems the less dogmatic are his conclusions; and second, physicians should more frequently and frankly discuss the affairs of purely professional as well as scientific interests, and should constantly consider public health problems. In its broader aspects public health touches nearly every phase of human activity and we should feel ourselves burdened with the duty of integrating and stimulating the many factors that help, and of curbing those that hinder. In harmony with the idea of helping, I have deliberately placed upon our program five papers

dealing with matters of public health. Pardon a few definite references to some factors that seem to *hinder*.

(a) The modern world has gone distracted over the idea of environmental improvement of the race, but with ignorant assurance it points the finger of ridicule at every suggestion of eugenics. In New York City alone there are two thousand societies devoted to protecting, controlling and aiding the inefficient; but less than half a dozen associations direct their energies to questions of heredity that might prevent a new crop of inefficients. The public—the marrying public at least—should know that mental and physical vigor are equally hereditary.

(b) Modern criminology is a menace and disgrace, largely because well known scientific facts are ignored and laws are formulated on ideas of vengeance rather than prevention. A full discussion of this subject with teachers, lawyers, social workers and other cultured citizens might promote genuine progress.

(c) A more distressing obstacle to productive thinking and wise conclusion is found in the ridiculous extremes advocated by some of our single track psychologists, for example, that all maladjustments in adult life are the results of infantile sex trauma and childhood inhibitions; that self-expression is always more important than self-control; that behavior directs and dominates all innate endowments. These extreme theories could not have become so prevalent and dangerous if the leavening sanity and experience of wise and reticent family physicians had been consulted. Contacts and diet are not the whole story. Hamlet was correct in meditating:

“A man may fish with a worm that hath eat of a king,

And eat of the fish that hath fed of that worm.”

“Vitamins, vigor and vim” may be sufficient for the fop and flapper, but these alone breed no genius.

Euripides was not all wrong when he wrote:

“Nature is all in all; in vain we try  
To teach the evil to be changed to good.”

We may well pattern our thinking to the sentiment of old Paracelsus:

“The book of nature is that which the physician must read,  
And to do so he must walk over the leaves.”

A superficial glance at the tree of science is insufficient. It is only when “we walk over the leaves,” press out the juices, inhale the aroma, taste the sap and interrogate nature, sobered by proper controls, that we can wisely interpret her lessons. It means we must not merely know the latest, but the sanest about animal and human psychology, both normal and abnormal. Thus endowed, the physician may wisely direct the reading of those depending upon him for guidance. Mental poise, physical vigor and sane thinking vitally influence educational policies, moral standards, religious guidance, legislation, judicial interpretation, and, in fact, every phase of racial betterment.

The medical profession must keep itself prepared to stimulate, to criticize, to restrain its patients, and to direct them toward a proper interpretation of the various theories bearing upon the mental no less than upon the physical phases of life. A fellow townsman of old Hippocrates, a Sophist, doomed to drink the hemlock as did his teacher (Prodicus), formulated the physician's confession of faith and practice in the words:

“All that helps humanity is of God.”

(d) Statistics published last week by the American Medical Association indicate a shortening of life among physicians. The average age of those dying in 1929 was sixty-four and nine-tenths years; in 1930 it was sixty-three and seven-tenths. For Alabama it was sixty and six-tenths. More than fifty per cent of the deaths in our Alabama profession were due to cardio-renal disease, an evidence that the doctors are stoking the engine unduly and driving the machine too hard. In no other profession is this the case. In Alabama the physicians are dying about five years younger than they should, and largely from overwork and under-rest. May we not vary the grind with more vacations and more diversions? As advisor to the needy, a physician should be of more value to the community in the eighth decade of life than at any other time. A little more rest, a little less work in the fifties, may carry us through ten years more of useful activity.

But I must hasten to this giving of advice, modestly aware that my suggestions are for discussion and deliberation rather than for precipitous adoption.

I wish first to discuss two or three matters of concern to our general membership. Some of us seem to think that to issue a birth certificate is a favor to parents and do not understand that it is a definite duty that we owe the State. Our willingness to furnish these certificates to the health department should never depend upon whether or not patients have shown appreciation of our services. This is a more serious matter in the county health department than is generally recognized.

Another question may seem of rather academic interest, but it is one of great importance: there is too much indifference to the use of exact nomenclature in giving the cause of death. If the attending physician writes “heart failure” as the cause and this slips through the county and State offices, it certainly will not be accepted at the United States Bureau of the Census, and immediately a letter comes back requesting further particulars. I am told that it requires an extra clerk in many of the county health departments to correct the oversights that need not have occurred. We should keep at hand a copy of the pamphlet



on proper classification of deaths and see that every certificate corresponds to its requirements. We should zealously endeavor to perform our fullest obligations, thereby relieving the health department of serious embarrassment and ourselves of censure.

The most prevalent criticism that one hears about our Association has to do with "the steam roller" and with "politics". It is rather difficult to know just what is meant. When one hears the phrase "steam roller" it generally means that the speaker and his friends are not the drivers, and the word "politics" too often means that the speaker and his friends are not the winners. But it should be our pleasure to remove every possible occasion for this criticism.

I have been urged to advise that county health officers be not permitted to serve as delegates to the State Association, and if undue numbers of these officers were frequently sent as voting delegates it might entail some dangers. But, we must remember that the first function of our Association is that of a state board of health and to protect the citizens against disease. Our Committee of Public Health, our State Board of Censors, is burdened with the duty of interpreting and executing the laws of the Association, and they should accept this serious responsibility with good cheer if not with pleasure.

(1) Hitherto, the "steam roller" criticism has been largely applied to the State Health Officer because it was believed that he dominated the Committee of Public Health. He should not be handicapped with this censorious attitude. The State Health Officer gives no orders to the Committee of Public Health. He should initiate no activities except such as have been well considered and approved by that committee. For this reason, I very earnestly urge that the Association adopt the policy that the State Health Officer be not a member of the Board of Censors. At the beginning of our organization it was necessary for Cochran to interpret his plan and direct the Board, but such necessity no longer obtains. If I were the State Health Officer I would absolutely decline to consider such membership. If the time ever comes when the separate counties are forbidden to send health officers as delegates to the Association, I earnestly hope that each of the four separate sections will be directed to elect two health officers as delegates, who shall attend our annual meeting and with the State Health Officer interpret for the Association the special view-point of preventive medicine.

(2) When our Association was organized, there were probably not half a dozen specialists in the State. Today, there are over two hundred and they

fall largely into three groups: those treating diseases of children; diseases of the eye, ear, nose and throat; and some of the other specialties of surgery. The Southern Medical Association has fifteen sections. At least one of these groups has organized itself into a society and many of them believe they should be given a special place on the program of the State Association. I have felt that up to the present the program should be largely for the general practitioner and that a session devoted to some special subject might not offer the broadest appeal for his needs; but I would advise that the Board consider the question of devoting one afternoon of each annual meeting to the specialties, in which the pediatricians might have, at one place, a meeting for those interested in their specialty, the urologists, eye-ear-nose and throat doctors and x-ray men, or other divisions, might have their separate meetings. At present I am not prepared to advise this change, but feel it ought to be thoroughly considered by the Board.

(3) Under our Constitution the President is directed to "select members to present essays." When the Association was small this was probably wise. It meant the selection of good talent personally known to the President and resulted in the naming of a limited number who have furnished most of the scientific papers; and they have dominated the discussions. This is unfortunate. We should devise some method by which a larger proportion of the younger membership might gradually be brought to participate in the scientific work of the Association. It has been a matter of great surprise to find a large number of volunteer papers offered, and the President should not be expected to accept or decline these. I would suggest the wisdom of appointing a committee to whom all volunteer papers would be referred before January 1st, that committee to have final decision as to whether such papers are suitable for our annual programs. To the President may be left the selection of other talent, with the suggestion that rarely should an invitation be extended to a member who has read a paper within the preceding three years.

(4)—(a) Four meetings for each of the divisions appear to be too many. I am apprehensive that these meetings interfere somewhat with the work of the county societies; and unquestionably the spring meetings of these divisions are likely to interfere with the success of the annual meeting of the Association. It is advised that, for the next year or two, the winter and spring meetings be omitted, leaving one for the summer and a second for the fall. If a trial of this plan proves it unwise, we can revert to the quarterly practice.

(b) I find the expenses of each of these divisional meetings is between twenty-five and thirty dollars, and sometimes it falls entirely upon the Vice-President. I would advise the Association to contribute to each division which has held a meeting, the sum of twenty-five dollars toward the stenographic and postal expenses, making a possible total of two hundred dollars yearly.

(c) It is suggested that at each divisional meeting the program contain at least one short "snappy" paper on a single phase of public health, especially on those features bearing on the border line

between private practice and health department activities.

(5) It is advised that the State Health Department provide each county health unit with a blue print—a chart of organization—showing the exact functions of the State and county health departments and their various subsidiary bureaus. Most of us are unfamiliar with the detail work and we could render a more cheerful assistance and maintain a much more sympathetic attitude if better acquainted with the various functions performed by the State and county health units.

(6) Many physicians tell me that they receive more inspiration from one day at a divisional meeting than they do from the same time at the State medical gatherings. This is unquestionably due to the fact that the State Association meets in larger cities where there is much to divert us from the business in hand. I would ask the Board of Censors seriously to consider the wisdom of placing a definite limit on the cost of annual entertainment of the Association by its hosts; and I advise that our meetings be held occasionally in such cities as Gadsden, Huntsville, the tri-cities of the Muscle Shoals district, and other places where hotel accommodations may seem adequate. Transportation to these places is certainly more difficult; and while it may not always be convenient for the general membership, we may recall our duty to instruct the general public in the functions of the State Medical Association as a public health factor, and consider the advantages obtained for this purpose by meeting in various communities.

(7) It has seemed almost impossible for our "Transactions" to be issued before September or October, six months after the meeting. Scientific contributions published in these "Transactions" alone are well nigh buried. I would urge the establishment of a "State Medical Association Journal," the expense to be borne jointly by the State Association and the Department of Health, and that this be continued for at least three years, to give it a fair trial before deciding the effort may be unwise. In this connection, I would suggest that the "Transactions" still be issued at cost to each member who may express a written desire for them in a book provided by the treasurer at the preceding State medical meeting. I would also urge the appointment of a committee of publication, consisting of three members, whose special duty it shall be to decide what communications shall be published in the "Journal," and that this disagreeable duty be not required of the Secretary of the Association or the Secretary of the Board of Censors.

(8) I am familiar with the present plan of the State Health Department with reference to tuberculosis and believe it offers many opportunities for service. The occasional criticism that this is the beginning of the practice of medicine by the State Health Department is unfair. Tuberculosis is a definitely communicable disease. If it is detected in its incipency, and intelligent care is provided, the disease need not become a menace, and its control may be effected. I am familiar with the plan for the establishment of tuberculosis sanatoria in various sections of the State. If established, these may become of educational value; but in its final analysis, tuberculosis must be controlled in the

home. If we could persuade every physician to do his full duty in every case from a standpoint of diagnosis, rest, diet, and sanitary disposal of infected material, it would be far better for the people and the tax-payer to control this disease at home.

(9) The outstanding honor offered by the State Medical Association is a request to deliver the Jerome Cochran lecture, and this compliment has been enjoyed by many of the most prominent physicians in the United States. In the future we shall naturally hope that an increasing number of scientists will bring us a message of recent research rather than discuss clinical problems. For the successful clinician the honor of delivering this message is sufficient to warrant his several days' absence and the attendant expense, but it is different with the full-time teacher or laboratory worker; and with these facts in mind I urgently advise the Association to pay at least one hundred dollars yearly as an honorarium to the Jerome Cochran lecturer.

(10) Our by-laws provide that the President shall appoint delegates to the American Medical Association and a new delegate is appointed each year. One must serve in the House of Delegates of the American Medical Association several terms before he can become reasonably familiar with its workings; and only after some several years of attendance does a delegate begin to have any influence in that body. I believe that we should make it a rule that the State Health Officer should be one of our delegates, and I advise that the other two delegates be appointed for a period of at least five years each. It seems to me that in this matter favors should not be passed around, but men of force, culture and ability should be selected who are willing to attend every meeting of the House of Delegates and who, by prolonged service, may become useful and influential. It would seem wise that they be re-appointed if their service has been of outstanding value.

(11) It seems to be the custom of our Board of Medical Examiners to charge ten dollars to each applicant who takes the examination for practice; and this is a very small fee for the time and work required. It appears that our Board, following the custom of many other states, charges a fee of fifty dollars for issuing certificates to applicants who come in under our agreement of reciprocity, or who have passed the National Board of Examiners. A charge of fifty dollars for issuing a certificate under these conditions is contrary to the spirit of professional ethics. The charge should in no case be larger than the approximate cost. The fact that this is the custom of other state boards does not make it justifiable. The idea that charging less than other boards would encourage an undue number to locate in this State seems fallacious and irrelevant. To accept an excessive fee for this service appears less ethical than to charge a brother practitioner for treating his child.

12—(a) At present it requires several years of study and experience to understand and appreciate the detailed workings of our organization and public health system. The very uniqueness of it makes understanding difficult. It is believed that two hours of instruction arranged by the State Health Officer and the Chairman of the Committee of Public Health, followed by an hour's explanation of the



details in the State Health Department, would prove a welcome assistance to candidates for license to practice and make them to become more quickly identified with the work.

(b) The laws of most states exempt physicians from jury duty and it is wise. We are subject to service as expert witnesses and for this Alabama's laws allow no more remuneration than that of a common witness, but some physicians are now forced to give from one to four days monthly as expert witnesses and this is sometimes most irksome for the doctor and a real menace to seriously ill patients. It is advised that our Board consult our attorney and with him and members of the Legislature endeavor to work out a plan to relieve us of this burden. At present, if it is known that a surgeon is a good witness in court, his presence may be and sometimes is required one or two days a week and this may be worse than jury duty.

(13) The Association has committed itself to a four-year medical school and it is our duty to see that before, or when, such a school is established it shall be provided with sufficient financial support. The state universities of Iowa, Wisconsin and Michigan spend over two hundred and fifty thousand dollars yearly on their medical departments, and these are not better than Alabama's should be. In addition, a university must have under its control at the very least a two-hundred bed hospital where the average patient remains less than thirty days. The cost per ward patient in ten of the best teaching hospitals of the United States for 1929 was five dollars and forty cents per day. If we assume that by the strictest economy patients in Alabama could be sufficiently provided for at four dollars per day, it would mean two hundred and eighty-eight thousand dollars yearly. We must recognize that it now requires a five per cent income on no less than ten million dollars to provide reasonably satisfactory facilities for teaching a graduating class of sixty students yearly. The medical department of Vanderbilt University has an endowment of thirteen million dollars and is in urgent need of additional funds.

On the other hand, if Alabama is to have only a two-year school it should be of such high grade that Alabama students would fill every vacancy. At the present time of our State's cramped finances, it seems unwise for Alabama to accept medical students from outside the State when the expense of teaching is three times as great as the cost of tuition. We must insist on the highest standards. Alabama's medical men should be as well trained as those from any other section; and when our university offers advantages equal to the best, medical students should be dissuaded from leaving the State.

So much, gentlemen, for the good of the organization. What about our own problems as practitioners of the healing art?

The Greek dramatists tell of Queen Jocasta, who was pregnant with twin brothers—always at strife—a pertinent illustration of the ever prevalent contest between the real and the ideal. Since the begin-

nings of science the peripatetics have been struggling with the academicians. For a time the followers of Plato seem in the ascendance, and then again the devotees of Aristotle take the lead. In no line of human endeavor has there been a happier or more harmonious combination of the two than in the work of our noble profession.

In times of distress, sorrow and uncertainty, the human mind seeks a new criterion of values, and while criticism rejects old standards, impatient nature strikes out for new liberties. At the present it seems fashionable to criticize every department of human endeavor. We have incessant reminders that the farmers, the bankers, the educators, commercial and industrial leaders, legislators and executives have failed. There is even intimation that the ministers helplessly permit an increasing number of persons to escape the sacred fold.

Our profession has not been exempt from trenchant criticism. Some of it is fictitious; some of it pitiable; a part of it is probably inspired; some of it is constructive; but all of it is interesting.

For thirty years there has been an increasing tendency for corporate wealth to exploit men of all professions. One reads of combined efforts, not only to direct the instruction in our colleges and high schools, but to select text books that shall teach the things corporations wish students to believe. Some corporations seem to covet the absolute authority formerly held by the church when it forced Galileo to recant and to say:

"Perish all physical science rather than one particle of the faith be lost."

A generation ago the engineering profession was quite independent and its members practiced as individuals. One hears much complaint that these men can now find employment only by corporations who require individuals to assign to them any discoveries and inventions made while thus employed.

A few years ago we heard censure of some members of the legal profession frequently referred to as "ambulance chasers". The Bar Association, having been made a self-governing body, adopted rules designed to end this practice by forbidding an attorney to accept employment in any action for

damages for personal injuries, or for death, from any person engaged even in part in the business of investigating or adjusting such claims for damages. The "ambulance chaser" thus passed from the scene, but we hear he has been succeeded by the banks and trust companies who freely advertise for legal business and divert the same to a limited group of attorneys of their own selection. The trust estate bears the burden and the expense. One hears the complaint that so-called "beneficiaries" too often become "sufferers". Instead, therefore, of lawyers now being "ambulance chasers," a smaller number are benefited by what has been denominated as "hearse chasing". To some extent the "hearse chaser" has the advantage over the "ambulance chaser", for while no one knows when the ambulance may pass by, one frequently has advance information as to the probability of the hearse's arrival.

We used to hear that industry denied to labor the scant wage necessary for shelter, food and raiment, and now we frequently read of industry's stubborn reluctance to yield a wage sufficient for its employees to provide comforts, diversions, selective medical service and scant cultural needs.

Beginning under the euphonious names of "Industrial Medicine" and "Service to the Needy", we sometimes have witnessed a degeneration into the lowest forms of lodge and list practice. The academic sociologist of limited experience observes the occasional and rare instance of satisfactory medical services rendered by contract to corporation employees by all-time salaried physicians and he naturally concludes: "If one corporation can do this thing so well, all corporations can do the same, and the government can certainly do it far better." There seems to be a growing belief that whatever service a corporation may render, the government can do more efficiently. Corporations unconsciously inculcate this doctrine by taking over many activities apart from their principal business.

In the European countries there has been an increasing tendency for state medicine to evolve from wholesale medical services rendered by contract, either under industrial corporations or insurance companies, and from all these countries one hears a complaint of an increasing number of malingerers.

Moliere once said that "physicians may be admired for what they do, but they are loved for their ingenuity in explaining their mistakes." In contract practice, whether done for industrial corporations, insurance companies, lodges or governments, "popularity depends only very slightly on professional capacity; almost entirely on willingness to accede to demands. The physician who will deal out prescriptions and sickness certificates without question, is popular. He gets a large following. His more particular and conscientious brother finds his share of patients dwindling." In Austria, Germany and England it is charged that the entire system promotes dishonesty on the part both of the patient and the physician.

If one is familiar with magazines of the last few years he is particularly interested in the frequent articles criticizing the medical profession in the United States. This is no new experience. The old Hebrew prophet of pessimism complains:

"Thy bruise is incurable and thy wound is grievous. There is none to plead thy cause; thou hast no healing medicines." (Jeremiah.)

Adverse criticism is the inevitable result of our own ethics. In one of his books Hippocrates admits:

"I have written this down deliberately, for it is valuable to learn of unsuccessful experiments and to know the causes of their non-success."

So far as I know, no other profession deliberately publishes for the benefit of its members detailed accounts of its own mistakes and failures.

With one or two exceptions, every stricture of our profession abounds in quotations from various physicians who have first called attention to some defect or tendency. In 1903 the organized profession set about to eliminate a large number of low grade schools and to prolong the period of required training in the remainder. For a time magazines and newspapers were scoring us, either for the diploma mills to which the doctors were forced to call attention or, on the contrary, they said the fraternity had united to exclude a large number of applicants, by making entrance requirements too high. But at present every town of ten thousand people enjoys surgical skill and



medical advice previously available only in the larger cities.

About 1920 a president of the American Medical Association made a ridiculous and unwarranted statement that our advanced standards of medical education had produced physicians of such superior training that they refused to locate in country districts; and that, for this reason, many communities were without medical services. Of course there are always a few who view the "verdant valleys and then pitch their tents toward Sodom," but good roads and the automobile have closed country churches, country stores and thinned out the doctors. The public should know that, through medical leadership, laboratory and hospital facilities are now available to twenty times the number having these advantages in 1903.

A Boston physician, urging the necessity of more frequent autopsies in order that physicians should become more expert in recognizing the early pathological changes of disease, mentioned the fact that autopsy records showed an incomplete diagnosis in fifty per cent of the cases. This was good meat for the headliner and the paragrapher and for the next few years we read much about the inefficiency and ignorance of the profession; but little is said about our patients living an average of twenty years longer than they did sixty years ago.

In May 1913 the American College of Surgeons was founded with the avowed purpose of raising the standards of surgical practice and discouraging a recognized tendency toward the division of fees between physicians and surgeons. A division of fees had always been practiced in the legal profession and doctors believed that there had never been cause for criticism of the custom in our sister profession, but early recognized that this practice might lead to serious abuses if continued in our own. Some popular writers were quick to seize upon remarks made by members of our own guild and to herald the implication that these pernicious practices were the rule rather than the exception. Of course, we have an occasional Gehazi following after the cured Naamans and accepting fees in secret. Physicians are not endowed with the divine discernment of Elijah, and they are impotent to punish offenders with leprosy as did the Tishbite, but we are hedged

about with an ethics more potent than that controlling the selection of some presidential cabinets.

It took years of earnest effort to persuade the legislative authorities of the wisdom of requiring four years' training and one year's internship before a man should be permitted to practice medicine, and four states still refuse these exactions. Organized medicine is still being chided for its insistence on these standards, and each quadrennium witnesses an effort to force recognition of some cult, with the single idea of feeding to the public the "warmed-over scraps of a fermentel meal" they have prepared in a brief course of so-called study and which they dignify by the title of some new "pathy" or practice".

During the recent war some of the special societies announced that they would refuse membership to all who had not shown special preparation for practice in these respective departments, and there was an early outcry that the doctors were trying to form a hierarchy and exclude from their inner sanctum all except a chosen few. Now, critics are reproving the profession for ever having permitted its members to enter special practice without a prolonged and special training.

A distinguished surgeon called attention to the fact that the charity hospitals employing hundreds of people on acceptable salaries but receiving the best of medical and surgical skill without a cent of return to the physician, supply to the pauper the same service as that received by the rich man. He stated that because of unusual expenses of laboratory, x-ray, radium, physical therapy and operating-room service, and because of the increasing demands for private nurses and private rooms with bath attached, it had become difficult for the man of moderate means to provide these necessities, and he urged us to study some plan whereby this burdensome collateral expense might be diminished. It seems now to have evolved itself into an effort to provide reasonable medical necessities to the families who have already provided themselves with modern luxuries through installment buying. If they fail to meet payments on the radio, the car, the furniture or the electric conveniences, the debts can be settled by returning the article; but, it would embarrass some of us greatly to have

from five to fifty babies returned to us because fond fathers had not paid delivery charges.

There is much lament over the passing of the old family physician: "He who brought his own medicine, spent the night with the restless baby, and never slept a wink." His most appealing trait was his welcome habit of keeping no books and sending no bills. Today it costs more to deliver a second hand car into an Alabama garage than it does to deliver twin boys into an Alabama home. It costs more to keep the car in repair than it does to keep the twins in health. One-half the expense of oil, gas and polish for the "old boat" for three months would vaccinate the boys against smallpox, typhoid, diphtheria, and lock-jaw for life. The censorious critic should not forget that today there is less pain, less blindness, less deafness, and there are fewer cripples and fewer incurables than at any previous time. There are now more than 15,000,000, living in the United States (and enjoying reasonably good health) than would be alive if we now had the same death rate as in 1870.

Whenever the destroying angel approaches the threshing floor of some Jebusite today, he finds the effective spirit of a Trudeau, a Reed, or a Gorgas in the person of a modern health officer with the command: "Thus far, but no farther." Surely medicine is "justified of her children".

Mystery, desolation and death have given place to knowledge, health and prolonged life. In the struggle for these achievements the members of the Medical Association of the State of Alabama have "bended no idle bow". Much of the work has been yours; may you live long to enjoy the glory.

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According to the opinion of the Council on Pharmacy and Chemistry of the A. M. A., the barbitol derivatives produce restlessness and excitement in some patients. Accordingly, barbitol, amytal, and similar preparations should be given with some discretion, especially when administered as a preanesthetic treatment either to induce quietness of the patient or to offset the toxic effects of a local anesthetic. The surgeon will be wise if he tests the susceptibility of the patient to barbitol derivatives prior to operation done under local anesthesia.—(Kentucky Medical Journal, June 1931.)

## THE JEROME COCHRAN LECTURE\*

### STUDIES ON THE PATHOLOGY OF TUBERCULOSIS AND SYPHILIS

R. S. CUNNINGHAM, Nashville, Tenn.

The adaptation of finer methods of cytology to the study of pathological processes is unquestionably an aim which should be cultivated by all investigators using the morphological approach to disease. More and more is this becoming true. The simple staining of sections with haematoxylin and eosin and the cataloguing and classifying of pathological changes in such preparations has been the standard method in the vast majority of pathological investigations. It is unquestionably true that much has been accomplished by the study of such materials, but it is equally true, if further progress is to be made in the analysis of morbid processes, that other methods must be brought into the field. Many such methods have been introduced in recent years and have added materially to our knowledge of the nature of disease. Among these might be noted the study of mitochondria, special methods for the analysis of connective tissues, vital staining and the various precipitation methods by which certain particular substances in cells are made visible in microscopic preparations. Especially in neurology have these methods been of great significance. One has only to think of Nissl bodies and Nissl substance and the tremendous advances made by the study of chromatolysis. In the analysis of the particular pathological processes, which I wish to discuss today, a very simple method has proven of the greatest assistance in giving us new concepts of the cellular changes involved. The method referred to is the so-called supravital staining of living cells. Blood and tissue cells are exposed to very weak solutions of certain dyes (usually dissolved in tissue fluids or blood plasma). Neutral red and janus green have been the dyes most commonly used. Many changes in the reactions of these cells have been observed under various conditions and the method has been used to great advantage in

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\*Delivered at the Annual Session of the Association, Birmingham, April 22, 1931.

\*From the Department of Anatomy, Vanderbilt University School of Medicine.



the study of the blood and tissues in tuberculosis.

This method has been developed and used for the study of living cells by Ranvier, Certes, Pappenheim, Cowdry, Lewis, Sabin, Simpson and others. But it was not until 1923 that it was directly applied to the analysis of tuberculous tissues obtained from lesions developing *in vivo*. In April, 1923, there was a case of primary adenopathy in the Johns Hopkins Hospital which had certain peculiar characteristics that were most puzzling to the clinicians. A lymph node was removed at biopsy, and was sent to Dr. Sabin for study in the hope that some additional light could be obtained with regard to the condition of this particular patient. The clinical diagnosis at the moment lay between Kundrat's lymphosarcomatosis and Hodgkins' disease. Dr. Sabin made scrapings from the node and stained these preparations supravitaly with neutral red (which she was at the time using for the study of living blood cells). To her amazement and to mine, as I, very fortunately, had the opportunity of seeing these preparations, the slides were filled with large mononuclear and multinuclear cells containing, in their cytoplasm, enormous numbers of minute droplets which were stained brilliantly with neutral red. Furthermore these cells had none of the large and irregular red stained masses, such as we were accustomed to see in the phagocytic cells of the blood and tissues. In addition to these stained droplets, unstained bacilli were seen in the peripheral cytoplasm of these cells. As soon as sections were obtained of this node, it was obvious that we were dealing with a tuberculous process. In the sections it was also found that the large mononuclear cells contained numerous acid-fast bacilli.

These characteristics of the epithelioid cells of tuberculosis were studied by Sabin, Doan and Cunningham, by Lewis, Willis and Lewis, and by Cunningham, Sabin, Sugiyama and Kindwall. The latter observers inoculated a large series of rabbits with bovine tubercle bacilli and studied the blood and tissues supravitaly as well as by the usual methods. When these animals had developed advanced tuberculosis their lungs, especially, and other tissues to some extent, were found to contain enormous numbers of cells which were wholly simi-

lar to those seen in the human lymph node referred to above. It thus became evident that we had observed a peculiar characteristic of the epithelioid cell of tuberculosis by which it can be identified individually, and which, therefore, indicated that the single typical epithelioid cell should be considered the unit of tuberculous pathology rather than the conglomerate union of cells;—the so-called tubercle. Our studies on the rabbit furthermore indicated beyond doubt that the bacilli gained entrance to normal phagocytic mononuclear cells, that the bacilli proliferated within the cytoplasm of these cells and, by some means, brought about the characteristic changes indicated by the specific staining reaction described above. This process resulted further in the gradual accumulation of fat droplets and the eventual death of the cell, with the subsequent liberation of more viable bacilli than had originally been taken in. It thus became clear that we could define tuberculosis more specifically than heretofore;—in terms of a single specific cell and the bacilli which it contains. Furthermore, it seems probable that the fact that tubercle bacilli can live and proliferate intracellularly explains the peculiar inertia of tuberculosis to any form of therapeutic approach. It is a unique situation, the bacilli being protected from destruction by the very cells whose natural proclivities are to destroy all foreign organic matter which obtains entrance to the tissues.

Coincidental to the development of tuberculous lesions in this series of rabbits, it was found by routine blood studies that the circulating monocytes became increasingly more numerous. When studied with the supravital method, a qualitative change was also observed. Many of the monocytes tended to approach the epithelioid cell type in the manner of their staining with neutral red. Numerous fine droplets appeared in the cytoplasm and the larger vacuoles which are usually present in normal monocytes were absent. This process of the transformation of monocytes into epithelioid cells was studied very specifically in preparations from the tissues of these tuberculous animals and it was found that typical epithelioid cells and every transition between them and normal monocytes were always present.

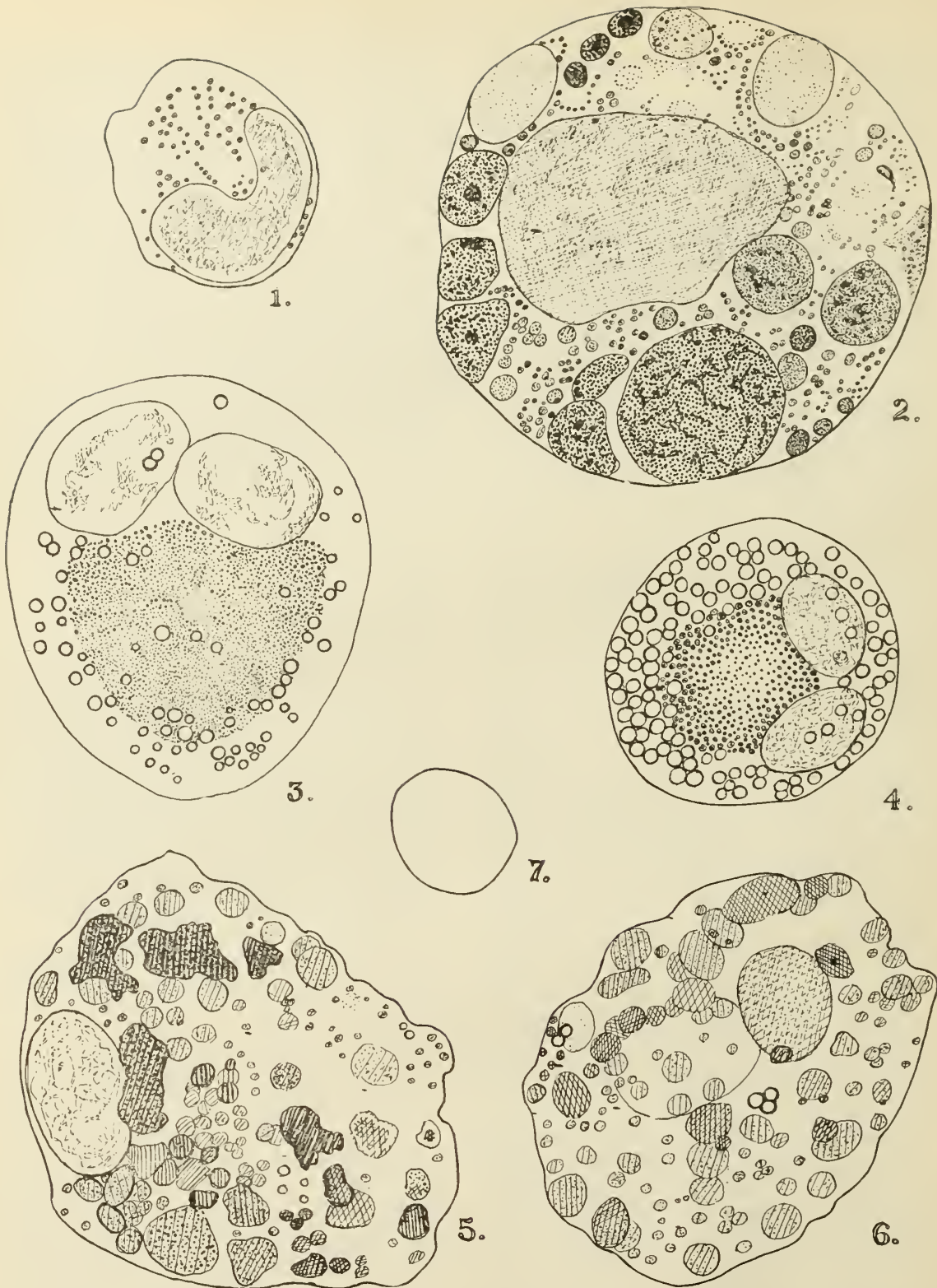


Fig. 1—Drawing of a monocyte from human blood. Fig. 2—Drawing of a clasmatocyte from the spleen of a normal rabbit. Fig. 3—Drawing of an epithelioid cell obtained from the lung of a rabbit with advanced tuberculosis. Fig. 4—Drawing of an epithelioid cell from the subcutaneous tissue of a guinea pig, which had been injected with a solution of phosphorous in olive oil. Figs. 5 & 6—Drawings of cells from the testes of rabbits which had been inoculated with *treponema pallida* and which had been subsequently stained by intravenous injections of trypan blue. Fig. 7—Normal erythrocyte for comparison.

NOTE: The nuclei were colorless in all the cells which are shown in the drawings, since the cells were living when studied. Neutral red staining is shown by dots. Trypan blue inclusions are represented by lines. Combinations of blue and red are represented by cross-lines, where the staining with neutral red predominated, and by lines and dots where the blue predominated. The cells shown in Figures 5 and 6 were the only ones which contained any blue. The cell shown in Figure 2 contained a great variety of inclusions which stained with neutral red and showed a considerable variation in the shades of color. The small discrete circles indicate droplets of fat.



We have interpreted the increased number of circulating monocytes as evidence of an increased maturation of these cells in the tissues. This interpretation, however, was only qualitative in our original work. It has since been put on a quantitative basis by the experiments of Geiger. He found a very limited reserve supply of monocytes in normal animals, while in tuberculous animals the reserve supply of monocytes was relatively very large. It is of course well known that there are large numbers of granulocytes somewhere in the vascular bed which may be called into the peripheral circulation by various means. This has been found to happen after the introduction of such substances as peptone (Arneth) and after exercise (Garry). Geiger carried out two series of experiments. In the first, small doses of a suspension of colon bacilli were injected intravenously into normal guinea pigs and the acute changes resulting in the circulating blood cells were studied. Leucocytoses of 30,000 to 50,000 were obtained following the inoculation of 1 c.c. of a given suspension of colon bacilli. In these animals the monocytes did not increase in total numbers but remained at an approximately constant level. When animals, which had previously been inoculated with tubercle bacilli and which had been kept in the laboratory until evidences of tuberculosis had developed, were given similar or smaller injections, the monocytes rose paralleling the polymorphonuclear leucocytes and reached elevations eight to ten times the normal level. Many of the monocytes obtained at the peak of these striking elevations were epithelioid in character. These epithelioid cells invariably disappeared promptly after the subsidence of the leucocytosis. It is quite clear, I think, that these experiments demonstrate that the presence of tubercle bacilli in the tissues brings about a tremendous increase in the production of monocytes and that these monocytes are then available as sources for epithelioid cells. If one desires to argue teleologically one might assume that this increase was purposeful and directed toward the destruction of the invading organisms; and that it resulted in the unfortunate result noted above only because of the unusual capacities of the tubercle bacilli to modify the normal physiological activities of these cells.

Geiger's findings suggest the possibility of differentiating certain types of mixed infections in which the clinical response to pyogenic infections obscures the customary symptoms of tuberculosis. I have seen several such cases. These have all been cases where pyogenic infections have been superimposed upon old tuberculous cavities and have resulted in the formation of lung abscesses. In any case of acute infection in which there is a high monocyte count one must always take this possibility into consideration. The moderate rise in the neutrophilic leucocytes which frequently occurs in late stages of tuberculosis must not be confused with the rapid and marked elevation occurring in the case of an acute pyogenic infection. The leucocytosis of late tuberculosis is moderate in degree (Medlar) and is never comparable to the experimental results produced in guinea pigs by the injection of colon bacilli.

The capacity of the monocytes, which we have noted above, to undergo transformation into epithelioid cells becomes, then, the most important characteristic of tuberculosis, as far as the pathology of the tissues is concerned. The most prominent characteristics of this transformation are the peculiar staining of the cells with neutral red, the gradual accumulation of fat, and the modification of monocytes to form multinucleated giant cells of the Langhans' type. This entire process presents the general picture of some type of cellular degeneration or modification. We interpret it as a change in the physiological processes of the cell rather than as the formation of a new type of cell.

Two general phases of the reactions of the monocytes and epithelioid cells can be more or less specifically defined at the present time. The first of these is an increase in the monocytes and the development of epithelioid cells in the lesions which occur in the general connective tissues of the body, as well as in the specific parenchymatous organs. This reaction on the part of the tissues is expressed in the blood by an increase in the number of circulating monocytes: an increase which we interpret as representing an overflow of cells from the areas of proliferation in the tissues. At the moment, we are unable to furnish any information as to why epithelioid cells are so rarely found in the blood stream, but it does

not seem improbable that this is due to loss of motility and that this change, as well as other physical changes in the character and size of these cells, tends to anchor them more securely in situ. It is probable that the more normal monocytes are located furthest from the areas of actual pathological change, as, for example, on the periphery of tubercles, and may therefore have a greater opportunity of gaining access to small blood vessels, and hence to the general circulation.

In addition to the progressive increase in the monocytes of our tuberculous animals, we found a marked decrease in the lymphocytes in those animals whose obvious resistance to infection had become very low. It was very clear, when one divided these rabbits into two groups, those which had been infected and recovered, and those which eventually succumbed to the infection, that the differences in the lymphocytic curves of these two groups were tremendously marked. In the former, the lymphocytes always remained above the monocytes and the two curves in fact tended to diverge from each other, whereas in the latter they invariably crossed. This marked difference in the reaction of animals succumbing to the disease and those recovering from it made us feel the advisability of applying these studies to human cases. When this was done precisely the same relationships were found, modified of course by the fact that in the majority of human cases there is a much less rapidly progressing and fulminating disease than we had produced in our experimental animals. Nevertheless, the increase in monocytes and the decrease in lymphocytes has been of great significance and has assisted very materially both in the diagnosis and in the prognosis of tuberculosis in human beings. Our observations in this connection have been confirmed by other investigators, whose work has been reviewed in detail elsewhere, and for that reason need not be specifically referred to here.

In brief, it has become apparent that a marked rise in monocytes indicates an extension of the disease and measures roughly the extent of the pathological process. The lymphocytes, on the other hand, fall when the patient becomes symptomatically worse and may therefore be used as a rough indication of the state of resistance.

For many years we have had two principal schools of thought concerned with the origin, character and function of the great phagocytic mononuclear cells of the blood and tissues. These theories have been referred to again and again in the literature and need not be discussed here. Reference to these cells in this communication will be limited to those observations which are concerned with their role in tuberculosis. It is necessary, however, to refer very briefly to certain well accepted characteristics of these cells and to indicate some of their interrelationships in order to explain the differences in the findings in tuberculosis and syphilis. The monocytes of the blood (the transitional cells of Ehrlich) are characterized in the supravital stain by having a moderate number of neutral red vacuoles which vary somewhat in size and which may, under the proper stimulation, become markedly increased in number. These cells are also found in the tissues, under certain conditions, and, as we have seen above, in tuberculosis every transition can be found between them and the characteristic epithelioid cells.

In the connective tissues in general and especially in the spleen, lymph nodes, liver and bone marrow, one finds cells which have been variously spoken of as macrophages, clasmotocytes, pyrrol cells, etc. These cells are characterized by the large amounts of foreign substances, cellular debris and vital stains, which they are able to take up; they are, in effect, the great scavengers of the body, concerned in the removal of any foreign materials which may have gained access to the tissues.

There have been two principal lines of thought in regard to these two types of cells; the monocytes and the clasmotocytes. Most observers have thought that they are identical cells which, under different physiological circumstances, present different morphological appearances; that in the blood stream they are incapable of much phagocytosis, while in the tissues this becomes a major function. On the other hand, it has been maintained by a few workers that these cells are distinct in their origin but that, since they are both capable of phagocytic activities, the stimulation of this capacity by the proper environment (e.g., association with cellular debris in the



tissues) brings about their approach to each other, in morphological appearance. While I have been associated primarily with the latter view, I am not at the present moment concerned with arguments in its favor, but rather with establishing clearly the fact that in the mammalian organism one can invariably demonstrate these two types of cells and that their marked difference from each other must have an important physiological significance.

Recently it has been found possible to demonstrate the origin of epithelioid cells from clasmatocytes (Tompkins and Cunningham). It is therefore clear that both monocytes (as had been previously shown) and the more highly phagocytic clasmatocytes can undergo this specific type of degeneration under the influence of tubercle bacilli. In other words, in tuberculosis, all phagocytic mononuclear cells, be they of one or of many origins, are reduced to the same degenerate type;—the epithelioid cell, a cell incapable of combatting the tubercle bacillus. Such an interpretation obviously points the way for future studies on tuberculosis. Our hope is that some means may be found whereby these cells can be modified so that they can destroy the tubercle bacilli which they take up.

There is much evidence that the change occurring in the phagocytic mononuclear cells, by which they become modified and changed into epithelioid cells, is not specific as far as the tubercle bacillus is concerned, but is the result of some type of limitation in the supply of those substances required by the cells for their normal life. This peculiar type of staining reaction was first observed by Lewis and Webster. These observers found that, in cultures of lymph nodes, large cells with fine neutral red granulation and a tendency to accumulate fat occurred in considerable numbers after several days incubation. Lewis and Lewis later demonstrated that, in cultures of blood, similar cells were produced.

These observations may be interpreted in several ways. The specific changes referred to above may result from a limitation of the supply of oxygen, foodstuffs, or accessory substances, or from the development in the cultures of substances inimical to the normal functioning of these cells. If

any of these suggestions be true for changes occurring in tissue cultures they would probably be applicable to the similar changes noted in tuberculous lesions.

Following the work on tuberculosis, outlined above, there have been two major developments which have strongly supported the concept that the peculiar character of the epithelioid cell is determined by some metabolic modification, rather than by a specific effect of the tubercle bacillus. The first of these studies was that of Sabin and Doan, who introduced a phosphatid, obtained from tubercle bacilli, and found that local lesions wholly similar to those of tuberculosis very promptly developed. Lawrence, Tompkins and Cunningham demonstrated that olive oil containing small amounts of yellow phosphorus would likewise produce large numbers of typical epithelioid cells, giant cells and cells showing the terminal fatty degeneration so marked in tuberculosis. These authors further found that many substances—olive oil, almond oil, agar, gelatin and mercury—produced changes similar in type, though somewhat less marked, to those produced by phosphorus in oil. Finally, Wright studied the effect of oxygen, nitrogen and carbon dioxide, introduced individually into the subcutaneous tissues of guinea pigs, and found that these gases were also capable of producing typical epithelioid cells and giant cells. His experiments are extremely interesting in that nitrogen, whose rate of absorption is the slowest of these gases, was the most potent in its action on the tissues, whereas oxygen, with the highest rate of absorption, was the least potent.

A critical examination of these various experiments indicates that there can be no simple chemical factor possessed in common by all these substances, and to which the tissue changes can be referred. It is therefore necessary to postulate some activity dependent upon the physical changes in the cellular environment as the common factor in the action of these substances. The one which seems most logical, in this connection, is the simple limitation in the supply of necessary food or accessory food substances. The changes in these cells are so peculiar and so specific that one is strongly inclined to feel that the probabilities are in favor of the limitation being in

some rather special and particular substance.

Last year Dr. Morgan requested that we study supravitality the tissues from his rabbits, which had been inoculated with *Treponema pallida*. These animals had large, florid lesions in the scrota and testicles, from which it was easy to obtain abundant serous material and consequently the lesions were very easy to study supravitality. We sacrificed a considerable number of these animals and studies of the materials obtained showed very large numbers of enormously hyperactive clasmatoocytes. These cells varied in size from the type ordinarily seen in the spleen of rabbits to cells, 100 microns in diameter, and containing numerous phagocytosed leucocytes and many red blood cells. The number and character of these cells varied considerably with the type and character of the lesions, but the interesting fact was that, in all of the syphilitic lesions studied, they were uniformly present and, furthermore, in only the rarest instances were epithelioid cells ever seen. It is quite obvious to any one that, in making such a statement as the above with regard to the pathology of syphilis, no attempt is being made to describe the pathology of this condition as a whole, but rather to indicate specifically the reactions of a single group of connective tissue cells which, since they are ubiquitous in their distribution, must obviously become involved in any lesion of testicle or scrotum. We do feel that these cells present exceedingly important evidence concerning the character of the reaction taking place in a syphilitic lesion. Undoubtedly other types of cells play important roles in the pathological reactions of syphilitic lesions but we are not concerned with them in this connection. We are specifically utilizing the reaction of these cells as an indication of the type of effect being produced by the infecting organisms. In tuberculosis we found them depressed and degenerate. In syphilis they are tremendously hyperactive and apparently functioning at a greatly increased rate.

Certain other experiments which have been under way here, have assisted in giving us a preliminary interpretation of these results. An interpretation which, however, must be presented with considerable reservation, as it is tentative in the extreme.

The hypothesis is that in tuberculosis either the tubercle bacilli or some substance produced by them interferes in some way with the metabolic activity of the phagocytic mononuclears (both monocytes and clasmatoocytes) and brings about by some means the incapacity which these cells manifest in their failure to kill and digest the bacilli. In syphilis, on the other hand, we find great hyperactivity in the phagocytic mononuclears. It is well known that syphilitic lesions will regress spontaneously. This is invariably the case in experimental animals and does not in itself indicate complete healing in the general sense of cure of the disease. On the other hand, regression in tuberculous lesions is, as a rule, more or less synonymous with an actual and complete healing in the area involved. One pictures the process as different in certain essential characteristics. One sees the formation of tubercles. The gradual change of the center of this cellular mass into a caseous area. From this point two changes may occur. The caseous material may be absorbed, replaced by fibrous tissue and complete healing occur. The bacilli will have been destroyed or eliminated and nothing will be left except a scar or a calcified area. On the other hand, these caseous areas in tubercles may fuse into larger masses, breaking down of the caseous material may occur by enzymatic action, and this material may be absorbed or may be discharged by rupture into adjacent blood vessels. Abscesses and cavities are thus formed and remain surrounded by active tuberculous tissue or fibrous capsules. In an acute syphilitic lesion, the process is obviously different. If one follows these lesions in the rabbit, the first and most prominent of the acute signs is a generalized edema. The tissues are widely distended with fluid. This fluid contains many granulocytes and monocytes, and numerous small but active clasmatoocytes. As the edema subsides, the number and activity of the clasmatoocytes increase and gradually the lesion is transformed into a firm nodule. This nodule becomes progressively harder and more fibrous, gradually diminishing in size until it disappears entirely. If the lesion is in the testicle proper there is marked atrophy of the parenchymatous tissue. Nevertheless, one does not as a rule see the formation of abscesses or cavities, or even the



earlier stage so conspicuous in tuberculosis, marked caseation. It is true that occasional areas of tissue will break down and there will be caseous material formed, but this is removed very rapidly and the final picture is one of complete healing. And yet this process differs from tuberculosis, in that despite these evidences of healing, this tissue, when ground up and inoculated into other animals, will invariably reproduce the disease.

Have our experiments given us any explanation of this curious difference in the progression of the two conditions? The answer seems to be in the affirmative. In a tuberculous lesion all the macrophages, the scavenger cells of the tissues, have been reduced to a senile and impotent type, and it is only when the lesion is small and not progressive or when some other factor intervenes that healing takes place. In syphilis, however, no such change in the macrophages occurs. Instead, they are increased in number and are more active, and it may well be possible that to these cells can be ascribed the rapid and uniform elimination of the actual tissue lesion which occurs so significantly in these experiments. We have one group of experiments to mention in this connection as supporting evidence. We have found that, when rabbits with lesions of approximately equal size and length of duration are arranged in two groups, and the animals in one of the groups heavily stained by intravenous injections of trypan blue, while the other group of rabbits is kept as a control, the lesions in the former disappear with considerably greater rapidity than do those in the latter. The animals which have been vitally stained are still capable of furnishing viable *treponema pallida* when their tissues are inoculated into fresh animals. There is some evidence in the literature that the administration of colloidal suspensions stimulates the formation of larger numbers of phagocytic mononuclear cells (Simpson). It is, however, not sufficiently clearly established for us to interpret our experiments frankly in this connection. It is possible only to state that the phenomenon occurs.

In conclusion, certain points seem particularly worthy of note. Both tuberculosis and syphilis produce very fundamental and

direct effects upon the group of phagocytic mononuclear cells in the tissues. These effects are diametrically opposite in the two diseases. There is certain evidence to indicate that the basic character of the change in tuberculosis is a metabolic degeneration due to the limitation of some specific food supply and that the change in syphilis is an hyperactivity resulting from the presence of some specific substance, either secreted by or called forth by, the presence of the *treponema pallida*.

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#### PLANTS CAUSING HAY-FEVER IN ALABAMA\*

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Montgomery

Allergic diseases are by no means rare. Balyeat estimates that seven per cent of the population of the United States suffers from some allergic manifestation while Duke puts the figure at fourteen per cent. Most observers agree that about one per cent of the population suffers from hay-fever. In the State of Alabama there are approximately 25,000 hay-fever sufferers.

While hay-fever is not a disease with fatal termination, it is the cause of marked distress. The paroxysms of sneezing, the difficulty of breathing through obstructed nostrils, the irritated and watery eyes, and the itching nose and throat cause great discomfort and often incapacitate the sufferer during a period of one to two months year in and year out. Of every hundred patients with hay-fever, sixty will eventually develop asthma with its added discomfort and the possibility of cardiac complications which after many years may be fatal. Finally, these patients have been convinced, as a result of their own experience, that there is no possibility of cure. They have usually been from doctor to doctor and have been treated with nasal sprays, eye-drops and adrenalin hypodermically, but have obtained only temporary relief. Often they have been told that nothing can be done to cure them. The realization that hay-fever is a common disease, that it causes great distress, and that the cause of the distressing manifestations in most cases can be determined and the symptoms greatly re-

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\*Read before the Association in annual session, Birmingham, April 21, 1931.

lieved by proper treatment warrants the presentation of the following facts.

In 1819, John Bostock described in the *Medical Chirurgical Transactions of London*, twenty-eight cases of a disease to which the name "hay-fever" had already been given by sufferers from the malady who had concluded that the disease was due to emanations from hay. In 1873, Blackley published his paper on the "Experimental Researches into the Cause and Nature of Hay-Fever." He demonstrated that the symptoms resulted from contact of a sensitive mucous membrane with the pollen of some grass. Applying grass pollen to the nasal mucous membrane of a sensitized person he produced typical hay-fever symptoms. By applying pollen to the conjunctiva, he provoked an intense conjunctivitis. He devised the first skin test by placing dry pollen on a scratch in the skin of a sensitized person with subsequent erythema, swelling and intense itching. No symptoms appeared if the individual so treated was not a hay-fever sufferer. These experiments definitely proved that hay-fever results from contact of a sensitive nasal mucous membrane with grass pollen.

Unfortunately, the discovery of this one fact did not settle all the problems of the etiology of hay-fever, for there were patients whose symptoms appeared in early spring before the grasses had begun to bloom; others, in late fall after the grasses had ceased to pollinate. Such patients did not react to the instillation of grass pollen into their noses or eyes, nor did they have positive reactions when this pollen was applied to a scratch in the skin.

It had been frequently observed that typical hay-fever occurred in some patients at the time when golden-rod was in bloom and that walking in a field of golden-rod or smelling the flowers resulted in the production of an attack of hay-fever. It was therefore natural to conclude that golden-rod caused the symptoms. Several facts, however, prove conclusively that golden-rod is only an innocent bystander and plays no part in the production of hay-fever. I list below the proof of the innocence of golden-rod.

(1) Symptoms of hay-fever often subside while golden-rod is still in bloom.

(2) Patients have attacks of hay-fever when in the center of town, far removed from golden-rod.

(3) The appearance of symptoms when the patient is far away from golden-rod cannot be explained by assuming that the pollen is blown by the wind, because careful observations have failed to show the presence of golden-rod pollen in the air.

(4) These patients do not have positive skin reactions to golden-rod pollen and treatment with this pollen does not relieve them.

This is the explanation of the part played by golden-rod. In the field with the golden-rod is an abundance of ragweed. This plant begins to pollinate about the same time as the golden-rod but ceases to pollinate about a month before the latter goes to seed. Its flower is small and inconspicuous but is produced in vast numbers. Its pollen is profuse and the individual granule, being small and light, is carried far by the wind. It settles everywhere, even on the leaves and between the petals of the golden-rod. Hence when a sensitized person smells golden-rod, he inhales ragweed pollen. Skin tests have proved that a large percentage of the patients whose symptoms occur in the fall are sensitive to ragweed and treatment with an extract of this pollen relieves the symptoms. Though golden-rod pollen can be bought on the market, I have ceased to use it in the routine testing of patients.

The case of the rose is almost identical. So firmly fixed in the mind of the public was the feeling that rose was the chief cause of the spring type of hay-fever that the term "rose-fever" was used to designate this type. The rose, however, like golden-rod, is innocent and the pollen of inconspicuous lawn grasses is usually the cause of the symptoms. Likewise the sun-flower, daisy, primrose, dahlia, honeysuckle and dandelion have been proved of no importance in hay-fever causation. All of these plants possess certain common characteristics. Their flowers are conspicuous, brightly colored and highly scented. They produce pollen in small quantities. The pollen granules are large, heavy and sticky and are carried by insects from flower to flower. I cannot overemphasize the fact that insect-pollinated flowers play no role in hay-fever production.

There are other flowers that are small and inconspicuous, uncolored and unscented. They attract no insects. They rely entirely upon the wind to distribute their pollen. Such a wasteful method could be successful only if the pollen were pro-



duced in tremendous quantities. The pollen is light and never sticky, and can be carried many miles by a moderate breeze being blown everywhere, even into the highest buildings. To this group of wind-pollinated plants belong those that play a major role in hay-fever production—the ragweed, trees, grasses and weeds.

When I first took up the study of hay-fever, I was confused by the large number of pollens which were offered on the market. One manufacturing concern listed a hundred and fifty varieties. It seemed impractical and expensive to use so many pollens in testing a patient. Many firms publish lists of the pollens that are

important in the various sections of the United States, but I found these incomplete and inaccurate as to dates. I, therefore, set out to make my own list, one that would apply to Montgomery County and would include the exact dates of pollination.

In making up this list, all of the conspicuous flowers were omitted. Plants not found in Alabama were not included because these could not be a factor with local patients. Certain species that are found in this county were omitted for the reason that, though they have been employed in thousands of skin tests, they have never evoked a reaction and because they have never been proved to be the cause of a case

## POLLEN CALENDAR FOR ALABAMA

Clarence K. Weil, M.D.

Species	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	
Alder ( <i>Alnus rugosa</i> )	XX XX										
Elm ( <i>Ulmus americana</i> )		XX XXXX X									
Hackberry ( <i>Celtis occidentalis</i> )		X XXXX X									
Red Oak ( <i>Quercus rubra</i> )		XXXX XX									
White Oak ( <i>Quercus alba</i> )		XXXX XX									
Hickory ( <i>Corya aquata</i> )		XX XX									
Pecan ( <i>Corya pecan</i> )				XX XXXX							
Black Walnut ( <i>Juglans nigra</i> )					XXXX X						
Poplar ( <i>Populus alba</i> )			XX XX								
Cottonwood ( <i>Populus deltoides</i> )			XX XX								
Sycamore ( <i>Platanus occidentalis</i> )			XX XXXX								
Ash ( <i>Fraxinus americana</i> )		XXX XX									
Mulberry ( <i>Morus rubra</i> )		XXXX									
Sweet-gum ( <i>Liquidambar styraciflua</i> )			X XXX								
Willow ( <i>Salix nigra</i> )			XXXX X								
Iron-wood ( <i>Carpinus caroliniana</i> )		X XXXX XX									
Annual Blue Grass ( <i>Poa annua</i> )			XXX XXXX								
Rye Grass ( <i>Lolium perenne</i> )					XX XXX						
Bermuda Grass ( <i>Capriola dactylon</i> )					X XXXX XXXX XXXX XXXX XXXX						Frost
Johnson Grass ( <i>Holcus halepensis</i> )					XX XXXX XXXX XXXX XXXX XXXX						Frost
Plantain ( <i>Plantago lanceolata</i> )				X XXXX XXXX XXXX							
Dock ( <i>Rumex acetosella</i> and <i>crispus</i> )				XXXX XXXX X							
Amaranths ( <i>Amaranthus spinosa</i> , <i>retroflexus</i> & <i>hibidus</i> )					XXXX XXXX XXXX						
Cocklebur ( <i>Xanthium canadense</i> )								XX XXX			
Chenopods ( <i>Chenopodium ambrosioides</i> & <i>alba</i> )						XXXX XXXX XX					
Short Ragweed ( <i>Ambrosia elatior</i> )								X XXXX XXXX			Frost
Giant Ragweed ( <i>Ambrosia trifida</i> )								X XXXX XXXX			Frost



of hay-fever. The pines and sedges were omitted for this reason. Over a period of three years, I have observed the dates of pollination of the plants in the vicinity of Montgomery and have completed a table which I hope will prove a source of help to everyone in the State who is interested in the hay-fever problem.

The "X" in the table refers to an interval of one week. If placed on the left of a space, it means the first week of a month, if on the right, it refers to the last week. A glance at the table will show at once which pollens may cause symptoms at any time of the year. It should be remembered that in the southern part of the State, the spring pollens appear a little earlier and the fall pollens a little later than indicated in the table. On the other hand, in the northern part of the State, the spring pollens appear at a later date and the fall pollens earlier than in the table. Undoubtedly, in the mountainous parts of the State and in the coastal region, the flora is somewhat different and I hope this paper will stimulate physicians living in these sections to make a survey of the plants in and around their communities.

The first pollen to appear in the air is that of the ALDER (*Alnus rugosa*), a small tree or shrub which grows in thin woods and along the road-side. It blooms from the middle of January until the middle of February. Symptoms occurring at this time of year can be due to no other pollen for the alder holds the stage alone during its period of pollination.

ELM (*Ulmus americana*) pollinates from the middle of February until the end of March. The pollen of this species is particularly toxic and causes intense symptoms in a sensitive individual. Elms constitute a large percentage of the shade trees in Montgomery.

HACKBERRY (*Celtis occidentalis*) is used as a shade tree even more than the elm. Patients are rarely very sensitive in their reaction to this pollen, but the abundance of the tree in the patient's vicinity makes up for the mildness of reaction.

OAKS (*Quercus rubra* and *alba*) are found both in the city and in the forests. For all practical purposes, the individual species need not be considered separately. The pollen of the oak is produced in tre-

mendous quantities and the ground is often covered with the catkins or male flowers. Pollination lasts throughout the month of March and occasionally into the first part of April.

Of the nut trees, the most abundant are HICKORY (*Corya aquata*), PECAN (*Corya pecan*) and BLACK WALNUT (*Juglans nigra*). The close biological relationship between the pollens of these three species is evidenced by the fact that a patient sensitized to one, will present a positive skin reaction to all three. Also immunization against one will protect against all three. I am under the impression, however, that a patient will have symptoms due to one species and not to the others for I have observed patients who suffered during the season of pollination of the pecan but not during the preceding four weeks when hickory was in bloom nor during the succeeding two weeks when black walnut was in bloom. These trees pollinate during a period of about thirteen weeks—from the middle of March until the end of May, each pollinating for a period of about four weeks, hickory starting first, pecan next and black walnut last. Hall estimates that hundreds and possibly thousands of hay-fever sufferers in California owe their discomfort to the pollen of the black walnut. Pecan is mentioned as a cause of hay-fever in the Carolinas and in Georgia. I have seen four cases of pecan hay-fever and am convinced that there are hundreds of such cases in the State of Alabama. The tree is being planted more and more in this State. I believe that in the future there will be many more cases recognized as due to pecan pollen.

Waring has described several cases of hay-fever in Denver due to COTTONWOOD (*Populus deltoides*). This species possesses two sexes—the male tree which produces pollen and the female tree whose seed bears small hair tufts which are known as "cotton." Both the pollen and the cotton may cause hay-fever. Patients may be sensitized to either one or to both. Cottonwood and the closely allied POPLARS (*Populus alba*) pollinate from March 15 until April 15. The cotton is produced at a later date.

The table includes certain trees which seem to be of lesser importance in causing

hay-fever. They should be kept in mind in determining the cause of the more obscure spring cases. These are: Willow, ash, iron-wood, red mulberry, sweet-gum and sycamore. Their dates of pollination will be found in the table.

There are several hundred varieties of grasses in the United States. In the vicinity of Montgomery, I was able to collect thirty-five varieties in a single season. Fortunately it is not necessary to use all of the grasses in making skin tests for if a patient is sensitive to one grass he will show positive skin reactions to any grass. The grasses pollinate over a long period. By the 7th of March, the ANNUAL BLUE GRASS (*Poa annua*) starts to bloom, continuing to do so until the end of April. Our chief winter grass, RYE GRASS (*Lobium perenne*), pollinates from the middle of May until the latter part of June. BERMUDA GRASS (*Capriola dactylon*) starts to pollinate the last week in May and blooms until the latter part of September. This is the common lawn grass in the summer time. The grass which forms the greater part of the hay crop in this region is JOHN-SON GRASS (*Holcus halepensis*) which blooms in abundance from the middle of May until the end of September and produces a large amount of pollen. The importance of the grasses lies in the fact that they play a part in hay-fever production over a period of six months, from March until September.

There is little English plantain (*Plantago lanceolata*) in this section, most of it being found in lawns and meadow land. It blooms during the months of May, June and July. In Washington, D. C., where the plant is more abundant, about sixteen per cent of hay-fever patients react to its pollen.

THE DOCK family is represented by YELLOW DOCK (*Rumex crispus*) and SOUR DOCK (*Rumex acetosella*). These plants are very abundant in plowed fields and on the road side. They bloom during May and June, and are minor causes of hay-fever. The AMARANTHS are represented by several species, but the SPINY AMARANTH (*Amaranthus spinosa*) may be taken as a typical example. It grows in the places where one would think nothing could grow, in the cracks between cobblestones,

at the base of a stone wall, or in a pile of bricks. It pollinates from the latter part of May until the middle of August. In Oklahoma about 40 per cent of hay-fever patients react to this pollen.

The COCKLEBUR (*Xanthium canadense*) pollinates from the middle of August until the twentieth of September. The CHENOPODS are represented by GOOSE FOOT (*Chenopodium alba*) and MEXICAN TEA (*Chenopodium ambrosioides*), the former being abundant throughout most of the State and the latter confined to the gulf coast region. Both species bloom throughout July, August and part of September.

CORN is to be considered as a cause of hay-fever only in the case of those working near corn fields or in those who husk the corn, for the pollen though air-borne, is large in size and does not travel far. Farmers, cooks and housekeepers are likely to be affected.

RAGWEED is the royal family of hay-fever plants. Its pollen is responsible for over half of the hay-fever seen in this section and for almost all of the fall cases. There are two varieties in Alabama—COMMON RAGWEED (*Ambrosia elatior*) and GIANT RAGWEED (*Ambrosia trifida*). The plants make their appearance about the first of July. They line almost every road-side and cultivated field, and are found in almost every vacant lot within the city. They reach their full size by the latter part of August, the common ragweed generally measuring from five to six feet in height and the giant variety from eight to ten feet. The flowers are very abundant though they are inconspicuous due to the small size of the individual flower and the yellowish green color. They appear during the latter part of August and begin to pollinate as a rule during the early part of September. In 1930, the ragweed began to pollinate a little earlier—August 26th. Most patients who are sensitive to ragweed notice a sudden onset of symptoms coinciding with the date when the pollen first appears in the air. Patients who are less sensitive than the average may not begin to suffer until several days later when the pollen is more abundant. Variations in the intensity of symptoms will be encountered

(Continued on page 37)



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and of  
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July, 1931

### OUR NEW VENTURE

Traditional barriers are hard to hurdle.

For considerably more than three-fourths of a century—since its birth in 1847—this Association has tenaciously clung to the Transactions as a means whereby to preserve and to disperse amongst its members its official proceedings and scientific contributions. For the older member, who, throughout the years has taken pride in preserving these precious tomes, there exists a sentiment close akin to parental love. When in a reminiscent mood, he can quickly reach for one of these treasured volumes and forthwith establish contact with the minds of the leaders in this Association of by-gone years; he can live over again some of those stirring events in which he himself may have played a conspicuous part in the defense of the unshakable principles upon which this Association rests or, perhaps, to find himself battling for “the spirit of democratization” whose mighty waves, at times, would surge through our midst; and all done in a spirit of rugged honesty and sincerity of purpose, with what then seemed in consonance with the best interests of the organization.

One of the most valued possessions of the Association is a complete file of such Transactions—some of whose issues could not likely now be duplicated—securely sheltered in fire-proof vaults. While question of sentiment should never be lightly brushed aside, neither should they be permitted to boldly block the steady march of onward progress.

The fact is indisputable that some of the newer scientific presentations at our annual meetings have already begun to gather

moss before the annual volume of Transactions puts in its tardy appearance—and this in no sense is meant to be a reflection on the publishing committee of such volume. The lapse of a few months serves to blunt both interest and memory for the important things and happenings of the last annual meeting, with the result that frequently this volume finds its way, unopened, beside other musty, dusty tomes.

But a more cogent argument than this can be adduced in the Journal's defense.

Each and every member of this Association is an integral part of the State Board of Health and a vital part of his County Board of Health. The success of both rests upon the interest and loyalty displayed by the collective membership of this body. The public health activities of this State can advance only so far as the vision and leadership of such membership may dictate.

The oneness, the indivisibility, of the scientific and legal aspects of our organization can never be lost sight of, without serious detriment to both. The rapid and tremendous strides being made in the field of public health demand that these newer things be quickly gotten over to the entire profession so that it may sympathetically and understandingly co-operate and direct such activities in the channels best suited for the mutual interest of both profession and patient.

The profession of no other State has the rare opportunity of so wisely directing public health activities as has ours; and it is the fervent belief and hope of the Board of Censors that this important function will be admirably served through the medium of our state journal. Co-ordinated effort and harmony of purpose will surely win.

### ROSTER OF MEMBERS

Heretofore, the roster of members of the Association has constituted Part III of the annual volume of Transactions. The latest revision of the roster and revisions of the future will be issued annually as a separate volume. Each member will receive a copy. To others it will be available for \$1.00. The issue of 1931 will be placed in the mails shortly. Every effort has been exerted to make the listings accurate by counties and alphabetically. If there are errors, the Secretary will appreciate notice.

## A MESSAGE FROM PRESIDENT GAINES

The establishment of an official organ for our State Medical Association will doubtless mark the inception of a new epoch in the history of medical progress in Alabama.

Designed to disseminate among the profession not only the deliberations of the annual state meeting, the contributions from the county societies and from the district meetings, but also the many activities of the State Board of Health in preventive medicine, but it should prove profitable both in its compilation of the scientific advance of medicine in our State and in giving an impetus to the individual physician to record and report his work.

Much good work is being done in our State by doctors which, either because of diffidence or indifference remains unnoted; while, if presented with accuracy, would contribute its quota to the sum of our medical knowledge. Let us trust that this means of exchange through our journal will embolden the diffident and awaken the indifferent to the value of each doing his bit, so that with the summing up of similarities and the comparison of divergencies a few grains of truth may be sifted out for the enlightenment of all concerned.

Automobiles and good roads have eliminated the handicaps of isolation. No longer can a doctor, content with college information, wrap himself in a cloak of self-sufficiency, and, letting the rest of the world go by, remain the oracle of his small community. In many contiguous localities there are now doctors who are not content

to be thus enveloped and stifled by the limitations of their environment; instead they are initiating methods to develop their surroundings and improve themselves by extending their opportunities. Small hospitals and laboratories are being established by groups of men who have envisioned the advantages of co-operation in work and comparison of methods. The steadily growing number of physicians of this type will profit immensely by our journal

and will in turn aid in its success, not merely by their own contributions, but by arousing the contented ones from their inertia, and by stimulating the more alert to emulation. Members of county societies should not now need to be cajoled or coerced into presenting papers; it should rather become a habit. Let the neophyte be encouraged by the thought that while originality is always desirable, only accuracy is essential. The writing of papers and the reporting of cases will not only make him a more careful and painstaking practitioner; it will accustom him to public presentation of his work and pave the way for his appearance before a larger audience, should his message warrant wider consideration.

Let us further hope that the advent of the journal will result eventually in a material enhancement of the value of our annual scientific programmes.



Toulmin Gaines, Mobile  
President 1931-1932

The Sixty-Fifth Consecutive Annual Session of the Association will convene in Mobile, April 19-22, 1932.



## PROCEEDINGS OF THE ASSOCIATION

THE FIFTY-EIGHTH ANNUAL REPORT OF THE STATE BOARD OF CENSORS, INCLUDING ITS REPORT AS THE BOARD OF MEDICAL EXAMINERS AND AS THE COMMITTEE OF PUBLIC HEALTH.\*

W. D. PARTLOW, M.D., Chairman  
Tuscaloosa

### Part 1

The Board of Censors begs to submit this, its Fifty-eighth Annual Report:

The Board feels that the fiscal year just closing, has been one of exceptional importance and interest in the organized life of the Association. A spirit of harmony, a keen sense of loyalty to the high principles embodied in its Constitution, a firm resolve to still further widen its scope of usefulness for the people of the State, is everywhere apparent. We are, and rightfully so, becoming more acutely conscious of the exceptional opportunities for service vouchsafed the members of this organization—a responsibility and an opportunity vouchsafed no other organized group of which the Board has knowledge. In order for the machinery of this organization to function in a frictionless and competent fashion, harmony within its ranks is most essential. The Board feels that no factor can be more productive in developing and fostering such a spirit than a sincere effort on the part of all of the members of the Association to thoroughly acquaint themselves with the philosophy and logic permeating every fibre of its fabric. While this Association is fundamentally a scientific body, in its legal relations to the organic structure of the State it is much more; the Association is the State's duly constituted Board of Health, with duties and responsibilities commensurate with other departments of state. A proper grasp of the rather intricate relationships existing between our organization and the State and county governments can only be had from careful study and intimate association with its many details. If we are to maintain the leadership in public health affairs which has been bestowed upon us by the Legislature, we cannot, we must not, ignore the fact that there should be complete and sympathetic understanding of the machinery through which such leadership is to be preserved. With this thought in mind, the Board urges each member to give serious and careful thought to the relationship existing between himself, the organized profession, and the State.

### *Interim Meetings of the Board*

Since the last annual meeting of the Association, the Board has held three official meetings, exclusive of those held concurrently with this annual session. At the regular mid-summer meeting held in July of last year Dr. Baker, the newly elected State Health Officer, was requested to serve as

Secretary to the Board when sitting in its three capacities. At this meeting 19 applicants presented themselves for license to practice and all except one were successful; in the case of this applicant—a negro—irregularities developed of a suspicious nature and he was debarred from completing the examination.

At the January, 1931 examination, seven (7) applicants appeared and all were successful.

During the past fiscal year—that is, from April, 1930 to April, 1931—forty-six applicants have been granted certificates of qualification through reciprocity.

At the July meeting of the Board, the "Rules and Regulations Governing Application for the Practice of Medicine and of Reciprocity", which had not been revised for some ten years, were carefully considered item by item and such changes as seemed advisable were made.

At this meeting, also, the Board decided to hold four meetings annually instead of three which had formerly been the custom.

The next meeting was held November 24th in the evening and was a dinner affair at the Jefferson Davis Hotel; at this meeting the Board discussed and approved the establishing of a branch laboratory in Dothan; the tuberculosis and malaria programs as presented by the State Health Officer and in particular gave its approval of the proposed tuberculosis bill, looking to the construction of county sanatoria. The Board desires to direct especial attention to this measure and to request that the members use their influence with the Legislature to see that the bill, which is now on its passage, becomes law.

The question also was freely discussed at this meeting of the adoption by the Association of a state journal; the journal committee, selected by the Board and composed of Drs. Wilkerson, Harper, McLester and Baker, has given this matter careful and exhaustive study; after mature consideration of all phases of this question, the Board has formulated its recommendations, which will shortly be presented to the Association for action. Without entering into lengthy argument as to the reasons substantiating these recommendations, which reasons are fully set forth in the committee's report, the Board earnestly requests that they be approved.

The third and last interim meeting of the Board was held on January 12th last. No matters of particular interest to the Association other than routine, received attention at this time.

### *President's Message*

After a careful study of the President's Message the Board feels it should be commended to the members of the Association as a document, in the main, of sound advice and counsel, and also as a literary contribution to the archives of the Association. Particularly the President's favorable comments on the organization, growth and development of our health department is pleasing to the Board, as it shares with the President and its mem-

\*Presented to the Association, sitting as the Board of Health of the State of Alabama, in annual session, April 24, 1931.



bers a pride in the history and traditions of the Association as it is interwoven with and interrelated to the public health system of the State. The Board modestly but gladly accepts the favorable comment made by the President and shares with pride the congratulations he offers the Association in his message upon the selection it has made of State Health Officer, completing the line down to the present of Cochran, Sanders, Welch and Baker. If the wise suggestion of the President to the membership of the Association is followed, namely, to fully familiarize themselves with the underground principles involved in the public health phase of the Association's activities, the loyal and intelligent co-operation thus promoted and encouraged will make the work of the central health department and of the State Health Officer, with his corps of assistants and county health organizations a more unified, a more potent and a more effective instrument for the common good.

The President's Message deals in a profound and fundamental way with another allied public health matter that should be food for thought to the members of the Association when he refers in an interesting fashion to the basic principles of paramount importance of the study and practical application of eugenics and the laws of heredity as these determine the constitutional, mental and physical make-up of human beings and through these inevitable biological laws determine human behavior, and ultimately human institutions and relationships. Nothing could be more timely than his reference to the dangerous trend toward impractical theories of modern psychology in its application to the growth and development of body, mind and character. The Board commends the section of the President's Message dealing with this important subject to the careful study of the membership of the Association. After all, care and guidance of our people toward normal health, growth of mind and character, thus preventing deficiencies and inefficiencies, is a phase of public health and preventive medicine equally important with the prevention and protection against physical disease, and is, therefore, equally a function of the profession constituting the Association.

The President then discusses the important relation which every physician holds to the public health department in the matter of the accurate collection of vital and mortuary statistics. He emphasizes the fact that it is a plain duty which the physician owes both to the individual family and to the State to see that each birth and death certificate receives the careful attention at his hands which its importance demands and urges upon physicians the need for a greater familiarity with the International List of Causes of Death.

The Board heartily endorses this suggestion of the President and would remind the members of the Association that upon such statistics many of the activities undertaken by health departments are based.

The President next deals with the relationship which should exist between the State Board of Censors and the State Health Officer.

The Board is heartily in accord with the recommendation of the President that the State Health

Officer be not permitted to hold membership on the State Board of Censors.

Your Board holds this view for the following reasons:

(1) A health officer is selected primarily for his services in administering the Department of Health and in conserving public health. He is elected as a full-time man and should not divide that time with any extraneous duties.

(2) Membership upon the State Board of Censors calls for a ruling on many controversial points in no wise related to public health, that arise in all parts of the State. Taking sides year after year in bitter controversy necessarily builds up a host of enemies which makes a united profession back of the State Health Officer and his department, an impossibility. A health officer should be elected as a health officer and not as a politician. The less politics dragged into public health the better it will be for all citizens of the State.

(3) The State Health Officer is elected by the State Board of Censors, and is responsible to the Board for all his acts, which are periodically reviewed by the Board, which in turn accepts or criticizes his work. It is certainly not in keeping with any form of democratic government to create a situation where one may at any time be called upon to serve in the triple capacity of judge, jury and accused.

(4) The President would seem right in the reason he assigns why the State Health Officers in the past have been permitted to become members of the Board, namely, that Cochran, being the founder of the Association, was obliged to direct the Board in order to launch his plan successfully, and explain it to the profession. This need no longer exist, as the Association has passed the stage where it requires the perpetuation of any undemocratic custom.

(5) The present would seem an ideal occasion for correcting this error, since the State Health Officer is neither a member of, nor a candidate for membership on the Board. The Board which has nothing but praise to offer for the splendid work of its State Health Officer and which is in thorough harmony with all of his public health policies, feels certain that this stand will lessen the difficulties of his position and increase his efficiency.

(6) Recent information obtained from the American Medical Association is that an increasingly smaller number of state boards of health (now less than seven in the United States) have the State Health Officer as a member.

Since there is a proposed amendment to the Constitution covering this recommendation, the Board at this time only endorses the sentiment of the President as represented in this section of his address, but must defer final recommendation until the next annual meeting.

The next suggestion by the President is, that in so much as the ranks of the various specialists are growing year by year, the time has come when the Association should give serious concern to making provision for the proper expression of the interests of such groups and suggests that one afternoon session of the Association be allotted to the holding of such sectional meetings as may be formed.

The Board is fully cognizant of the size to which the Association has grown and also of the justice of the claims of such specialized groups and consequently is quite in harmony with the spirit of this suggestion.

It, therefore, recommends that Wednesday afternoon of the Association's session be set aside for such group meetings and that the President and the Secretary, in the shaping of the annual program, make all necessary arrangements looking to this end.

The President suggests that, in the arrangement of the annual program, a committee be appointed to which would be referred all volunteer papers, and that rarely should an invitation be extended to a member who has appeared on the program within the preceding three years.

Article IX, Section 3 of the Constitution of the Association specifically sets forth as one of the duties of the President the assignment of essayists to present papers at the meeting over which he is to preside. The Board would be loath to endorse any recommendation which would, in any wise, abridge or modify this constitutional privilege and prerogative of the President, and, therefore, respectfully declines to endorse this recommendation.

Dr. Partlow: Mr. President, would you prefer, as we proceed, to present each recommendation separately, or would you prefer to endorse the report as a whole?

President Harrison: I think it would be fair to let the members know which one they are passing on.

Chairman Partlow: Well, I move that the Report of the Board of Censors with reference to the suggestions of the President's Message be approved.

President Harrison: Are you ready for the question? The question is, Shall the Report of the Board of Censors with reference to this recommendation of the President be adopted? The President, feeling that a committee should pass on volunteer papers and that rarely should an invitation be extended a member who has appeared on the program within the preceding three years, made this recommendation.

The Report of the Board of Censors declines to recommend that. The question is, Shall you adopt the Report of the Board of Censors?

All in favor say "Aye." (Cries of "Aye.") All opposed "No." (No response.) The Report of the Board of Censors is accepted.

Dr. W. W. Harper: If you are going to take action on each recommendation separately we should act on the preceding recommendation.

Chairman Partlow: The recommendation referred to dealt with the relation be-

tween the State Board of Censors and the State Health Officer. The Report of the Board supports the suggestions of the President and states that by constitutional provision the matter will have to lie over until the next meeting for final action.

President Harrison: Do you understand the question? The President's Message recommended that the organic law be changed to make it impossible for the State Health Officer to become a member of the Board of Censors. Under our Constitution that matter must lie over for a full year before it can go into effect.

All in favor of supporting the Report of the Board of Censors say "aye." (Cries of "Aye.") Opposed "No." (No response.) It is so ordered.

Chairman Partlow: Mr. President there have been one or two other recommendations which the Association has not acted on.

President Harrison: We will be glad to have them.

Chairman Partlow: The Board concurs in the recommendation of the President and the Committee that a journal be adopted. The Board concurs in the recommendation.

President Harrison: Have you concurred in the President's recommendation that a publishing committee be appointed?

Chairman Partlow: Yes.

President Harrison: The State Board of Censors recommends the adoption of the recommendation of the President that the Association undertake to publish, with the appointment of a publication committee, a state medical journal.

A voice: Mr. President, I want to ask a question; Will this Journal supersede and take the place of our old Transactions?

President Harrison: The papers will appear in it and the Transactions will be issued. Is that correct?

Chairman Partlow: The Report of the Board of Censors deals further with the details—

President Harrison: Shall we delay until we get to that?

Chairman Partlow: Yes.

President Harrison: Then we will delay action on that recommendation until we get further details.

Chairman Partlow: The Board also concurs in the recommendation that the spe-



cialists be given an afternoon on the program.

President Harrison: We were about to overlook the recommendation of the Board of Censors that each Wednesday afternoon be set aside for the various specialties. This means there will be no general session on Wednesday afternoon. If you support the Report of the Board of Censors, Wednesday afternoon will be devoted to the meeting of the specialists.

All in favor of that recommendation say "Aye." (Cries of "Aye.") Opposed, "No." (No response.)

A voice: What became of the other motion we were to vote on?

President Harrison: Because of subsequent recommendations of the Board of Censors, it was decided to wait for that.

(Thereupon Chairman Partlow resumed reading.)

The President next deals with the question of the number, and the time of holding the divisional meetings of the Association.

Vice President Mayer, in his annual report of last year, and which, through an oversight on the part of the Board, did not receive consideration at that time, made recommendations similar to those embodied in this section of the President's Message and these will be shortly dealt with by the Board under the heading "Reports of Vice Presidents". The Board desires to here state that it approves the spirit embodied in this recommendation and particularly the suggestion made by the President that at each of these divisional meetings at least one "snappy" paper on public health be presented.

Dr. W. W. Harper: I move the adoption of the recommendation.

President Harrison: Do you understand this recommendation of the Board? Instead of having four meetings each year each division shall have two and specifically at each meeting it will be expected and required that we prepare one short snappy paper representing some specific phase of public health activity.

All in favor will say "Aye." (Cries of "Aye.") Opposed "No." (No response.)

Chairman Partlow: I might state that further on in our report under the head of Recommendations of Vice Presidents this matter is dealt with more fully.

(Chairman Partlow resumes.)

The next suggestion presented by the President is that the central office of the State Board of Health provide each county health unit with a blue print showing the exact functions and relation of

the State and County Boards of Health, with the view of eliciting from all doctors a more sympathetic co-operation.

The Board would remind the members of this Association that, among the first lessons taught all health workers at the department's training base are those pertaining to our own peculiar organization and of its intimate dependence on the organized medical profession. Such charts as mentioned by the President are readily accessible in every county health unit and the Board feels sure that county health officers will welcome the opportunity of discussing with their doctors the various details of public health organization.

Dr. W. W. Harper: I move the adoption of the section, Mr. President.

President Harrison: Does that carry with it a recommendation?

Chairman Partlow: It is an action on your recommendation.

President Harrison: All in favor of adoption will say "Aye." (Cries of "Aye.") Opposed "No." (No response.)

(The Chairman continues.)

The President next suggests the advisability of holding annual meetings of the Association in Gadsden, Huntsville and the tri-cities of the Muscle Shoals district.

The Board, while fully appreciating the spirit which prompts this suggestion on the part of the President, viz., the desire to stimulate a deeper interest in scientific medicine and in public health work among both physicians and laity, nevertheless sees many objections to a repetition of such a venture. The Association has grown to such proportions that only our three largest cities have the physical equipment necessary to care for the comforts of its members; and, added to this, the financial burden of providing entertainment for so large a group would likely prove embarrassing to certain of our smaller county societies.

For these, and other reasons, which might be enumerated, the Board declines to endorse this recommendation.

President Harrison: All in favor of supporting this paragraph of the Report of the Board of Censors will say "Aye." (Cries of "Aye.") All opposed, "No." (No response.) It is so ordered.

(The Chairman continues.)

The President next places his stamp of approval upon the adoption by the Association of a state journal, advising, at the same time, the continuance of the Transactions for such members as may desire such a volume for preservation.

With these views the Board is in perfect accord and will shortly submit its recommendation on this question for consideration and action by this body.

President Harrison: That does not require a vote?



Chairman Partlow: I do not think so.  
(Chairman Partlow continues.)

The President next expresses pleasure and his approval of the state-wide program which has been launched by the State Board of Health in the fight against tuberculosis, but takes occasion to point out the important fact that the adequate home care and control of this disease must not be neglected or subordinated. The President also points out that to brand such an activity on the part of our health department as an entrance into the practice of medicine is alike unwarranted and unfair in that the service is rendered through the family physician and is of a purely consultative nature; and for the further reason that tuberculosis being a definitely communicable disease, this fact places it squarely within the realm of public health control.

In these views the Board unhesitatingly concurs.

The next suggestion offered by the President is that the Association pay the sum of \$100 to the physician chosen to deliver the Jerome Cochran Lecture, to compensate, in some measure, for the time and money spent by such lecturer.

The Board is not unmindful of the sacrifice, both in time and money, made by any physician assuming this responsibility. This occasion, in the annual gatherings of the Association, constitutes the climax, the beacon light in our scientific deliberations. The hard worked doctor, whose precious time is limited and who looks forward with eager anticipation to our meetings, always arranges his schedule to at least be present for this address. The honor conferred upon any physician by being granted the privilege of joining with us in commemorating the memory of the beloved founder of this organization, is so distinct, so outstanding, as to make it a thing apart, and removed from all pecuniary reward.

The Board, entertaining as it does these views, declines to concur in this recommendation of the President.

President Harrison: Do you understand the question? The question is, Shall the Association contribute one hundred dollars annually towards the expenses of the Jerome Cochran lecturer?

All in favor of sustaining the Report of the Board will say "Aye." (Cries of "Aye.") Opposed "No." (No response.) It is so ordered.

(The Chairman continues.)

The next recommendation of the President deals with delegates from this Association to the American Medical Association and falls into two parts:

(1) That the State Health Officer be empowered by this Association to serve as a continuing delegate to the American Medical Association.

The Board begs to call attention to a similar recommendation made last year, by President Broughton and acted upon at that time by the Association. The Board entertains the same views now as then. For the benefit of the members, the

Board repeats here the approved recommendation, which is as follows: "It is the sense of this Board that the spirit of this recommendation of the President should be concurred in, but that the final determination should be left with the President of the Association as provided in the section of the Constitution referred to above, and so recommends". Therefore, the Board respectfully declines to approve this portion of the President's recommendation.

President Harrison: All in favor of supporting this paragraph of the Report of the Board of Censors will say "Aye." (Cries of "Aye.") Opposed "No." (No response.) It is so ordered.

Gentlemen, I am going to interrupt just a minute while we are properly seated to ask Dr. L. L. Hill, who has just come in the hall, to rise. He is the man who suggested the idea of the Jerome Cochran Lecture and I am going to ask that he rise. We are delighted, Dr. Hill, that you are with us.

(Thereupon amid applause, Dr. L. L. Hill rose to his feet.)

(Dr. Partlow continues.)

(2) That the remaining two delegates to the American Medical Association be appointed for a period of at least five years each.

Inasmuch as the Constitution of the American Medical Association fixes the time limit for each delegate to this body at two years, the Board does not feel that such action on its part would be in order and, therefore, declines to endorse this portion of the President's recommendation.

President Harrison: Do you understand the question? Only for two years. All in favor of adopting this section of the report say "Aye." (Cries of "Aye.") Opposed "No." (No response.)

A voice: Just for clarity, there is no reason why the President should not reappoint?

President Harrison: There is none.  
(Chairman Partlow resumes.)

The next suggestion of the President is that the present fee of \$50.00, now charged applicants to practice medicine who come into the State through reciprocity, is excessive and contrary to the spirit of professional ethics.

The fee now charged applicants who take the regular examination is \$10.00; when this amount is added to the hotel expense and the four days' time required to complete the examinations, the Board does not feel that the charge now made for a reciprocity certificate is excessive, nor does it feel that it involves any violation of the spirit of professional ethics. Should this fee be fixed at a mere nominal one, for example \$10.00, the Board is of the opinion that such fee might encourage some

applicants to procure certificates while not seriously entertaining the view of locating in this State.

The Board, therefore, declines endorsement of this recommendation.

President Harrison: All in favor of the adoption of this portion of the Report of the Board will say "Aye." (Cries of "Aye.") All opposed "No." (No response.) It is adopted.

(Dr. Partlow continues.)

The final suggestion offered by the President deals with the importance of giving the younger men now entering the profession of the State some insight into the workings of our organization and of our own method of conducting public health activities and suggests that the State Health Officer avail himself of the opportunity of briefly outlining to the applicants when taking their examinations such vital points as should be of assistance to them in their future careers.

The Board heartily concurs in this suggestion and begs to state that this is already the policy of the State Board of Health and is now being practiced by the State Health Officer. In addition to talks made to applicants, each one who is successful is sent a personal letter urging him to identify himself with his county medical society and pointing out the value to be gained through such affiliation.

President Harrison: That does not need a vote.

(Dr. Partlow resumes.)

### *Recommendations by Vice President Mayer in His Annual Report for 1930*

As explained in a foot-note on page 64 of the Transactions for 1930, the Board, through oversight, failed in its report of last year to give consideration to certain recommendations embodied in the vice presidential report presented by Dr. Mayer. With an apology now to Dr. Mayer and a craving of indulgence on the part of the members of the Association, the Board begs to submit the following:

#### *First Recommendation*

That there shall be two meetings held in each of the four districts instead of *four*, as now provided by ordinance and that the date and place of such meetings be designated by the Association.

Chairman Partlow: You will note some repetition in our report because certain matters dealt with under the President's recommendations are also contained in the suggestions of the Vice Presidents.

(Dr. Partlow resumes.)

This ordinance was adopted by the Association in 1925—six years ago. A study of the reports submitted by the Vice Presidents since its adoption shows that two divisional vice presidents have held as many as four meetings during two of these six years and that some of the districts held no quarterly meetings. However, such meetings as have been held, as a rule, have been well and enthusiastically attended and productive of real good. In the light of these facts, the Board is of the opinion that it would be the part of wisdom for the vice presidents to put forth real effort to hold two well attended meetings rather than four poorly attended ones, or none at all; and that such meetings be held in each district some time during the summer and during the fall. For several reasons apparent to the Board the place of such meetings should be left to the decision of the respective vice presidents.

The Board, therefore, recommends that section four of the ordinance adopted at the Birmingham session of this Association in 1925, and relating to the further duties of vice presidents, be so amended as to read: "Fourth—In addition to the other duties of a vice president prescribed in the Constitution, he shall hold each year two meetings of the medical societies comprising his district—one during the summer and one during the fall—and at such places as he may deem most suitable and accessible for the members of his district."

President Harrison: All in favor of adoption will say "Aye." (Cries of "Aye.") Opposed "No." (No response.) It is so ordered.

(The Chairman continues.)

#### *Second Recommendation*

The second recommendation reads as follows:

"I have been approached by many physicians in the district, as well as by a number of prominent physicians all over the State, protesting against the free immunization of all classes against contagious and communicable diseases by county health officers. It seems to be the consensus of opinion that there should be compulsory protection, however, there seems to be a positive feeling that this protection should be free only to indigents. Those who are able to pay, should pay to some one, either the health officer or to their family physician for this work, allowing the patient to select who shall do the work for which a fixed fee shall be charged. This fee should be fixed by the Association and enacted into a law."

One must ever bear in mind that the prime aim of any health department should be to *prevent disease* and to *promote health* among all its peoples, regardless of economic levels. The Legislature of this State has seen fit to vest the leadership and control of all matters pertaining to public health in the organized medical profession. This attitude is both sound and proper, albeit it does measurably increase our responsibilities; which responsibilities we have always striven squarely to meet. The po-



tent weapons, made possible today, through science, in the protection of human beings against the ravages of preventable disease, should be made as quickly available as possible to all. One has but to recall that more than one hundred and thirty years have passed since Jenner showed the world how to protect against smallpox! and yet, every state within the embrace of "Enlightened America" is still battling with smallpox and the inertia and superstitions hovering about it. The answer to such obstructive forces is—Education. The medical profession must grasp the important fact that the present generation demands that their bodies be protected through these newer discoveries of science and that the problem is ours to provide the proper channels through which such service may best be furnished. No state in the Union, because of the intimate association between its organized profession and its health workers holds the rare opportunity of properly directing these activities as does Alabama. Our health workers should zealously guard the interests of the organized profession in their respective communities and should encourage all persons, other than indigents, to seek this immunization service at the hands of the family physician where, all concede, it rightfully belongs.

Activities conducted by health workers among any particular group—as, for example, the immunization of school children against diphtheria—should be largely for educational purposes. In actual fact, all new principles, even though they be scientifically sound, must be demonstrated before we may hope for universal acceptance; the masses must be shown both that any given procedure does what is claimed for it and also that it does not kill. Just so soon as any procedure becomes well established in a given locality, the health workers gladly retire, except for the indigent phase of such activity.

In the light of the analysis just presented, the second suggestion embraced in this resolution that, in certain cases, the health officer be permitted to charge for his services, seems unwise to the Board. The law explicitly sets forth that a county health officer shall devote his entire time to the duties of his office and shall not engage in practice.

To the above extent the Board endorses the recommendation of Vice President Mayer, but does not approve of fixing fees, or of the county health officer collecting any fees.

President Harrison: Those in favor of this expression of the Report will say "Aye." (Cries of "Aye.") Opposed "No." (No response.) It is so ordered.

### *Reports of the Vice Presidents\**

The Board desires to express its commendation for the excellent type of work done by the Vice Presidents of this Association. Each of these offi-

\*Editor's Note:—Reports of subordinate officers of the Association will appear in a subsequent issue of The Journal.

cers has put forth an earnest effort to stimulate a livelier interest among the members of their individual county societies and in public health activities. The Board strongly entertains the view that a certain number of district conferences, if seriously considered and properly arranged, should be productive of immense good, and encourages and urges these officers as to the importance of holding such number of these conferences as this Association may decide upon.

Vice President Salter, of the Northwestern Division, makes two recommendations:

#### *First Recommendation*

That the papers presented at each divisional meeting be turned over to the Vice President presiding over such meeting and transmitted by him to the Secretary of the State Medical Association for publication in the Transactions.

The Board is in entire sympathy with the spirit of this recommendation; it realizes that for an essayist to know that any contribution made by him at such meetings would subsequently be published, should serve as a real stimulus to present a more worth while paper. The Board will shortly present for the consideration of the Association its recommendations for the adoption of a state journal and should such recommendations receive favorable action, the Board heartily endorses the suggestion and that papers presented at these meetings be transmitted to the Publishing Committee of such journal for consideration and action by said committee.

Chairman Partlow: We recommend that the papers be transmitted to the Publication Committee in the event that the Association concurs in our recommendation to adopt a journal.

President Harrison: All in favor of adoption will say "Aye." (Cries of "Aye.") Opposed "No." (No response.) It is adopted.

(The Chairman continues.)

#### *Second Recommendation*

That the expense incurred (postage, printing) in the proper preparation for these meetings, should be viewed as a legitimate charge against the funds of the Association.

The sentiment of this Association, as expressed in Article XIV, Section 4 of its Constitution, distinctly discourages the expenditure of its funds for entertainment purposes. The Board, therefore, recommends that the ordinance adopted in 1925, dealing with the further duties of vice presidents be amended by adding the following paragraph:

"7th. That the actual expense incurred by each divisional vice president, in so far as printing, postage and typing are concerned, shall be viewed as a proper charge against the funds of the Association, when, at each annual meeting of the Associa-



tion, such expense account, properly itemized, is submitted, accompanying the vice presidential report from that district."

President Harrison: All in favor of adoption will say "Aye." (Cries of "Aye.") Opposed "No." (No response.)  
(Dr. Partlow resumes.)

### *Report of the Secretary*

The report of the Secretary covering the affairs of the Association during the past fiscal year is full, complete and reflects much credit to the Secretary as to its completeness and detail of presentation, for which the Board commends Dr. Douglas L. Cannon to the Association for its thanks.

The Board recommends the adoption of the report of the Secretary.

President Harrison: All in favor of adopting that section of the Board's report will say "Aye." (Cries of "Aye.") Opposed "No." (No response.) It is adopted.  
(Dr. Partlow continues.)

### *Report of the Treasurer*

The thoroughness with which Dr. J. U. Ray has handled the affairs of his office during the fiscal year just closing should be recognized by the membership of this organization as expressing his devotion and loyalty to the Association. A check of his books has shown care in their keeping and that he has shrewdly handled the finances of this Association, for which he should receive commendation.

The Board recommends the adoption of Dr. Ray's report.

President Harrison: The Report of the Board of Censors endorse the official handling of our funds by our Treasurer. I assume you are in hearty sympathy. All in favor of saying we have an honest treasurer will say "Aye." (Cries of "Aye.") Opposed "No." (No response.) We have.

Chairman Partlow: Dr. Ray explained he is under sufficient bond for the handling of our funds.

### *Report of the Publishing Committee*

The report of the Publishing Committee has been carefully noted, and found in its usual complete form covering the duties, responsibilities and activities of that committee during the past year.

The Board recommends the adoption of the report of the Publishing Committee.

President Harrison: This section endorses the Report of the Publishing Committee. All in favor will say "Aye." (Cries of "Aye.") Opposed "No." (No response.) It is adopted.

(The Chairman continues.)

### *Report of the Committee on Prevention of Blindness*

Dr. Harvey B. Searcy, Chairman, submits three resolutions for the Committee on Prevention of Blindness:

(1) That a section be formed within the Association, composed of members specializing in diseases of the eye, ear, nose and throat and that this section hold one session during the annual meeting of the Association.

The Board, upon the recommendation of the President, has expressed its approval of the formation of sections within the Association and also of the allotment of one afternoon session to the holding of the various sectional meetings, and upon the adoption by the Association of this recommendation, the needs of this special section will be provided for.

(2) That the Department of Health endeavor to procure accurate information as to the cause and degree of defective vision in all cases under 21 years of age whose corrected vision is below a certain standard.

The Board is of the opinion that such data should prove of considerable value to the Department of Health and endorses this recommendation.

(3) The third resolution deals with the problem of providing for the more careful handling and examination of the pupils in the Alabama School for the Blind in Talladega.

The Board recognizes the importance of the problem here presented and is in hearty accord with the fine spirit manifested by this committee and recommends that our State Health Department co-operate in every possible way with this committee, and also with the Department of Education, under whose supervision this school is operated.

President Harrison: All in favor of adopting this section of the Report will say "Aye." (Cries of "Aye.") Opposed "No." (No response.)

(Dr. Partlow continues.)

### *Resolution Introduced by Dr. J. R. Garber, Chairman of Committee on Maternal Welfare*

WHEREAS, The findings of a recent study of the causes of maternal mortality in Alabama show that Alabama mothers receive less prenatal care than mothers in any of the fifteen other states studied, and

WHEREAS, A higher percentage of deaths from puerperal albuminuria and convulsions occurs in Alabama than in any of the other states studied; therefore be it

*Resolved*, That the Board of Censors of the Medical Association of the State of Alabama

be asked to give its most serious consideration to this problem; and be it further

*Resolved*, That it carefully review the constructive recommendation made by the Committee on Maternal Welfare and adopted in the session of 1928; and be it further

*Resolved*, That it invite further suggestions and recommendations from interested sources and devise a practical program for the amelioration of conditions which are responsible for Alabama's high maternal mortality rate.

The Board desires to bring to the serious consideration of the members of this Association the result of a careful and somewhat exhaustive comparative survey of the maternal welfare situation made in fifteen states of our Union. This study was conducted by the State Board of Health co-operating with the Children's Bureau of the Federal Government, and in compliance with a resolution adopted by this Association at its annual meeting in 1927. This investigation, begun in July, 1928, and completed in June, 1930, embraced 1,118 maternal deaths occurring in Alabama in 1927 and 1928. From this study came these disheartening facts:

(a) Alabama gave the least amount of prenatal care to expectant mothers of any of the fifteen states embraced in the survey.

(b) Alabama furnished the highest percentage of deaths from puerperal albuminuria and convulsions of all the states surveyed.

The Board not only unequivocally endorses this resolution submitted from the Committee on Maternal Welfare, but also reads into it a clarion call sounded to the entire medical profession of this State and urges upon this committee the importance of continuing the splendid work which it has inaugurated. The Board is not unmindful of its responsibility and obligation in this regard and here expresses the hope that, upon the adoption of a state journal by this Association, this instrument may be used as a mighty weapon in warfare against this high maternal death rate.

The Board recommends the adoption of this resolution.

President Harrison: All in favor of adopting this paragraph of the Report of the Board will please say "Aye." (Cries of "Aye.") Opposed "No." (No response.)

(Chairman Partlow continues.)

#### *Reports of Committees on Infant Welfare, Mental Hygiene, First Aid, Military Affairs*

The Chairman of each of the following committees, Infant Welfare, Mental Hygiene, First Aid and Military, have submitted comprehensive reports outlining the scope of their activities during the past year and making constructive suggestions

for the ensuing year. The Board desires to commend the members of these committees and urges a careful reading of these reports by all members.

President Harrison: Does that require a vote?

Chairman Partlow: I think not.  
(Dr. Partlow resumes.)

#### *Violation of the Federal Narcotic Law*

Under an Act of Congress approved June 14, 1930, the Bureau of Narcotics is empowered with authority to furnish to State Boards of Licensure the names of physicians, dentists, druggists, etc., who have been convicted of violation of the federal narcotic laws or of those cases which have been closed by the acceptance of offers in compromise, or of those who are addicted to the use of narcotic drugs. Since the passage of this Act, this Board has been furnished by the Bureau of Narcotics lists of physicians in Alabama who have been found guilty in any of the above particulars. Without indulging in detailed argument, this Board feels that the members of this Association appreciate both the gravity of such violations of the law by any of its members, as well as the necessity of preserving inviolate the fair name, the high ethical standards and the noble traditions of our profession.

Section 2847 of the Code of Alabama confers large latitude upon this Board when sitting as a Board of Medical Examiners as to the revocation of a certificate of qualification to practice medicine; a part of which section reads as follows: "The State Board of Medical Examiners may revoke a physician's certificate of qualification to practice medicine upon being convicted in any court anywhere while holding a certificate of qualification to practice medicine, of any offense involving moral turpitude or for violating any federal statute regulating the use or disposition of narcotics, whether committed under color of his professional duty, or connected therewith or not". In the light of these responsibilities, the Board feels that it has a plain duty to discharge both to the people of this State and to the organized medical profession. It, therefore, recommends that the Secretary of the Association be instructed to send a copy of the above analysis of this situation made by this Board to every practicing physician in the State.

President Harrison: The report provides that the Secretary of the Association shall send to each physician in the State a detailed statement of the present position of the Board's activities in connection with the question of the federal narcotic law. All in favor of the adoption of the section of the report will say "Aye." (Cries of "Aye.") Opposed "No." (No response.) It is so ordered.

(The Chairman continues.)



*Resolution from the United States Commission for the Celebration of the Two Hundredth Anniversary of the Birth of George Washington*

WHEREAS, The Congress of the United States has created a Commission to arrange a fitting nation-wide observance of the Two Hundredth Anniversary of the Birth of George Washington in 1932, and

WHEREAS, The Commission so created, composed of the President of the United States, the Vice-President of the United States, the Speaker of the House of Representatives, four members of the United States Senate, four members of the House of Representatives, and eight citizens appointed by the President of the United States, is charged with the duty of planning and directing the celebration, and

WHEREAS, The high purpose of the event is to commemorate the life, character and achievements of the most illustrious citizen of our Republic and to give every man, woman and child living under the Stars and Stripes an opportunity to take part in the celebration which will be outstanding in the world's history, and

WHEREAS, The George Washington Bicentennial Commission, desiring the full co-operation of the people in the United States has extended a most cordial and urgent invitation to our organization to participate in the celebration, therefore be it

*Resolved*, That The Medical Association of the State of Alabama does hereby endorse the program of the observance of the Two Hundredth Anniversary of the Birth of George Washington, to take place in 1932; accept with appreciation, the invitation of the George Washington Bicentennial Commission, and pledge this organization to extend earnest co-operation to the United States Commission in all possible ways, so that future generations of American citizens may be inspired to live according to the example and precepts of Washington's exalted life and character, and thus perpetuate the American Republic, and be it further

*Resolved*, That this resolution be incorporated in the official proceeding of this meeting and that a copy thereof be transmitted to the George Washington Bicentennial Commission, Washington, D. C.

The Board feels that the high purpose and sentiment expressed in this communication are deserving of approval by this Association and therefore recommends that the resolution be approved.

President Harrison: All in favor of the adoption of this section of the report will say "Aye." (Cries of "Aye.") (Opposed "No." (No response.) It is ordered.

(The Chairman resumes.)

*Advertising Doctors and Their Relation to the State Board Laboratories*

The Board's attention has been directed to the use of the State laboratories by certain licensed doctors who engage in newspaper advertising, with the request that the Board submit to this Association some definite recommendation as to the attitude to be taken in such cases.

The Board feels that, inasmuch as these laboratories are owned and operated by the State for the benefit and betterment of the health of all of its people, the service furnished by these laboratories should be made available to them through all properly legalized channels. It is the opinion of the Board that this service should be made available to all doctors who have been granted a certificate of qualification by the Board of Medical Examiners, regardless of their ethical status, so long as their certificates remain unrevoked; but that such service should not be made available to those illegal practitioners who might be practicing medicine in violation of the law. The Board, therefore, recommends that the Association approve the attitude and policy as above expressed.

President Harrison: All in favor of the adoption of this section of the report will say "Aye." (Cries of "Aye.") Opposed "No." (No response.) It is so ordered.

(Dr. Partlow continues.)

*Resolution Introduced by Dr. Jerre Watson*

*Resolved*, That Article XIII, Section 6 of the Constitution of the Medical Association of the State of Alabama, which now reads: "The board shall elect from the College of Counsellors by not less than a majority vote of its members an executive officer to be known as the State Health Officer, and shall submit the name of the officer so selected to the Association (the State Board of Health), in annual session, for confirmation", shall be amended by the addition of the following sentence: *The State Health Officer shall not be permitted to hold office as a member of the State Board of Censors.*

This resolution seeks to amend the Constitution of the Association. Article XXI, Section 2 of the Constitution of this Association reads as follows:

"All proposed amendments to the provisions of this Constitution shall be submitted in writing at a regular annual session of the Association, shall lie over until the next annual session, and shall then require for adoption not less than a two-thirds vote of the Counsellors and delegates present, the vote being taken by ayes and noes."

In compliance with this constitutional provision, action upon this resolution will be postponed until the next annual session of the Association.



President Harrison: That needs no vote. Under our Constitution it must be so ordered.

Chairman Partlow: The next item of the Report of the Board of Censors deals with the Report of the Journal Committee. I judge it isn't necessary to read the report but the Board after its study makes this comment:

(Dr. Partlow reads.)

### *Report of Journal Committee*

Your Journal Committee, appointed at the April meeting of the State Board of Censors by its Chairman and consisting of Drs. McLester, Harper and Wilkerson—and later the State Health Officer, Dr. Baker, was added—begs to submit the following report:

The instructions given this committee by the Board were to consider the feasibility and practicability, as well as the approximate cost, of the publication of a monthly journal by this Association and to report its findings and recommendations back to this body.

As to the feasibility and practicability of such a procedure, all members of this committee are in thorough accord. The Board will recall that Dr. Harper, in his presidential message to the Association in 1924, concisely and clearly outlined the needs for such a journal and some of the ways in which it should prove useful. Your committee would like not only to reiterate the sentiments then expressed by Dr. Harper, but also to emphasize the following points:

(a) By reason of the fact that the State Medical Association is the State Board of Health—a responsibility resting upon no other organized state association—the needs for an intimate and continuing chain of communications between its State Board of Health and the organized medical profession would seem imperatively necessary. Science is placing in the hands of the health workers of today so many new and potent weapons that public health has now become a specialty within itself. One of the prime functions of our State Board of Health is to train their health workers in the most modern and approved methods; and not only this, but, because of the obligations placed by law upon the medical profession of this State, it would appear that an equally important function of these trained health officers is to see that these new and approved practices seep quickly through to all practicing physicians. A journal should admirably serve to promote and facilitate such a service.

(b) Your committee concurs in the view expressed by Dr. John M. Dodson, Editor of Hygeia, to Dr. Cannon, Secretary of our Association, in a recent personal interview, that because of Alabama's unique medical and public health organization, such a journal should be productive of untold good.

(c) As to the approximate cost, your committee is of the opinion that not only should this not be prohibitive, but rather should it prove a source of revenue, at least, after such a journal had been

established and in operation for one or more years. In support of this view, the following figures are submitted:

The annual income of the Medical Association of the State of Alabama from dues and fees of Counsellors, delegates and county societies is approximately \$6,000.00. For the year 1929-1930 it was \$6,116.00, distributed as follows:

Counsellors' dues .....	\$1,000.00
County society dues.....	4,468.00
Delegates' fees .....	548.00
Interest on daily balance.....	100.00
Total.....	\$6,116.00

The cost of Transactions is now approximately \$1.50 per volume. A rough estimate for printing 2,000 copies of the journal, submitted by the printer of the Transactions, was placed at around \$6.00 per page; therefore, the printing of a 48 page journal would approximate \$288.00 monthly or \$3,500.00 annually. This printer further states that such material as is desired to be preserved for future binding in book form, can be run at the time of each monthly publication and bound at will.

Dr. Allen H. Bunce, Secretary-Treasurer of the Georgia State Medical Association and Editor of The Journal, submits the following figures for the past fiscal year:

Advertising .....	\$4,742.87
Subscriptions .....	4,797.38
Total receipts .....	\$9,540.25
All cost of printing, postage and salaries chargeable to journal.....	7,810.21
Profit .....	\$1,730.04

He adds, "the above statement for past fiscal year is about an average or perhaps a little less profit than for the other preceding years over a period of five years".

Dr. A. T. McCormack, Secretary-Editor of the Kentucky State Journal says: "Since 1907 we have had only two small deficits, one around \$25.00 and one about \$300. The journal has not only paid for itself; it has been the best investment the medical profession of Kentucky has ever made".

Dr. H. H. Shoulders, Secretary-Editor of the Tennessee State Journal, says, "I don't know what your membership is but I feel sure you could publish a journal successfully—Your advertising should more than pay your printing bill".

In the light of the above facts, therefore, your committee recommends as follows:

(a) That this Board recommend to the Association the adoption of a state journal, to be published monthly and jointly by the Medical Association of the State of Alabama and by the State Board of Health.

(b) That the name and style of such journal shall be: "The Journal of the Medical Association of the State of Alabama and of the State Board of Health".

(c) That the State Board of Censors be authorized by the Medical Association of the State of Alabama to take all necessary steps looking to the consummation of this plan.

(d) That the expense of such publication remaining after funds accruing from advertising matter and subscriptions from members have been applied be defrayed, on a prorata basis of allotted space, by the Medical Association of the State of Alabama and the State Board of Health.

(e) That the scientific material and official proceedings of the Association appearing each month in such journal be preserved and that these, together with the official roster of members, be issued annually in bound form for such members as may desire it, at a cost not to exceed one dollar per volume.

Chairman Partlow: That is the recommendation of the Board on the Report of the Journal Committee.

President Harrison: All in favor of adoption will please say "Aye." (Cries of "Aye.") Opposed "No." (No response.) It is so ordered.

(Dr. Partlow continues.)

Chairman Partlow: It is customary to omit the reading of the Report of the Board of Censors as a Board of Medical Examiners. This gives the statistics and figures as to the number of applicants who presented themselves for examination and for reciprocity, the number who have been successful and the number who have failed. Since it will be printed and distributed. It is customary not to read it.

Dr. W. W. Harper: I move that the reading of that section of the report be dispensed with.

A voice: Second the motion.

President Harrison: Gentlemen, there is a motion that the reading of that section of the Report of the Board of Censors be dispensed with, but that it be published as a part of these proceedings. All in favor of that action say "Aye." (Cries of "Aye") Opposed "No." (No response.) It is so ordered. (Secretary's note—The section referred to follows.)

# REPORT OF THE BOARD OF CENSORS AS A BOARD OF MEDICAL EXAMINERS

## EXAMINATIONS HELD JANUARY AND JULY, 1930; AND JANUARY, 1931

Total number examined.....	35
Total number of certificates granted .....	34
Total number of pro forma certificates granted .....	46
(a) By reciprocity with other states.....	45
(b) By virtue of examination by National Examining Board .....	1

## EXAMINATION HELD JANUARY 14 TO JAN- UARY 17, 1930

Number of applicants examined.....	10
Number granted certificates.....	9

## EXAMINATION HELD JULY 8 TO JULY 11. 1930

Number of applicants examined.....	18
Number granted certificates.....	18

## EXAMINATION HELD JANUARY 13 TO JANUARY 16, 1931

Number of applicants examined.....	7
Number granted certificates.....	7

## SUCCESSFUL APPLICANTS IN JANUARY. 1930

Auston, Paul William  
Coyle, Daniel Joseph  
Crawford, James Michael  
Evans, Kenneth Patton  
Godsey, Wash M.  
Mayfield, Peabody Burdett  
Smith, Floyd Patrick  
Smith, Merle Everett  
Williams, William Lewis

## SUCCESSFUL APPLICANTS IN JULY, 1930

Adams, John Ball  
Boyd, Frank Harrison  
Busey, John Francis, Jr.  
Cocke, Joseph Garber  
Green, Roy Curtis  
Grimes, Ormond Ralph  
McBurney, Ralph  
Coleman, Lowell Henry  
Collins, Chalmers Davidson  
Denison, George Ames  
Fonde', Edgar Crawford  
Franklin, Horace Gruley  
Meszaros, John Placidus  
Mitchell, Sidney Ashley  
Terhune, Samuel Ralph  
Williams, Thomas Frasier  
Wright, Durward Olera

## SUCCESSFUL APPLICANTS IN JANUARY, 1931

Beck, James Simon Peter  
Brown, Arthur Edward  
Cameron, James Edwards  
Cox, Dowlen Dorsey  
Cox, Percy Evans  
Elkourie, Leo Alexander  
Wolford, Thomas Foxworth



## RECIPROCITY APPLICANTS RECEIVED

APRIL, 1930-APRIL, 1931

Awtrey, Hugh Hanna—Tennessee.....  
 .....August 11, 1930  
 Berrey, Leo Alonzo—Oklahoma.....  
 .....July 7, 1930  
 Brooks, Roland Lee—Georgia.....  
 .....November 10, 1930  
 Britton, James Woodruff—Georgia.....  
 .....December 4, 1930  
 Clarke, Ralph Denson—National Exam-  
 ining Board.....January 2, 1930  
 Coston, Ralls McKinney—Oklahoma.....  
 .....July 5, 1930  
 Frank, Herman Weil—Louisiana.....  
 .....September 8, 1930  
 Gibson, Milton R.—North Carolina.....  
 .....July 7, 1930  
 Green, Albert Huey—Tennessee.....  
 .....July 5, 1930  
 Gunter, William Adams, III—New Jer-  
 sey.....July 28, 1930  
 Harris, Landy E.—Tennessee.....July 7, 1930  
 Henderson, Andrew Damrell—Tennessee.....  
 .....September 11, 1930  
 Hill, Luther Leonidas, Jr.—Louisiana.....  
 .....June 24, 1930  
 Hillhouse, John Loudon—Tennessee.....  
 .....June 19, 1930  
 Jackson, Marque Lesslie—Illinois.....  
 .....February 12, 1930  
 Kennedy, Jacob Jenkins—Missouri.....  
 .....April 14, 1930  
 Lavender, John Robert—Georgia.....  
 .....April 1, 1931  
 Lewis, William Georgia—Kentucky.....  
 .....October 9, 1930  
 Linn, Julius Earl—Georgia.....  
 .....August 11, 1930  
 Littlejohn, Wilmot Shipp—Georgia.....  
 .....March 24, 1930  
 Long, William Harvey—Georgia.....  
 .....February 1, 1931  
 Lynch, Marvin Heyward—South Caro-  
 lina.....September 8, 1930  
 Maddox, John Willard—Tennessee.....  
 .....May 12, 1930  
 Martin, Farris James—Mississippi.....  
 .....January 12, 1931  
 Martin, Thomas Willis—Louisiana.....  
 .....November 19, 1930  
 Matthews, Brunson Burns—North Caro-  
 lina.....March 30, 1931  
 McCune, Andrew McAlpine—Mississippi.....  
 .....March 15, 1930

McFatter, Theron K.—Louisiana.....  
 .....January 12, 1931  
 McKinnon, Mack Laughlin—Mississippi.....  
 .....September 26, 1930  
 McPheeters, Samuel Brown—Missouri.....  
 .....November 24, 1930  
 Mulherin, Hugh Gallagher—Georgia.....  
 .....June 19, 1930  
 O'Gwynn, John Coleman—Tennessee.....  
 .....October 3, 1930  
 Orr, William Lucius—Georgia.....  
 .....June 16, 1930  
 Purser, Thomas, Jr.—Mississippi.....  
 .....July 24, 1930  
 Richey, Clinton Hillyer—Kentucky.....  
 .....March 30, 1931  
 Ross, James Washington—Mississippi.....  
 .....July 28, 1930  
 Rountree, Walter Boyce—Tennessee.....  
 .....June 4, 1930  
 Rowe, Alvah Leo—Georgia.....  
 .....January 12, 1931  
 Smaha, Tofey George—Georgia.....  
 .....September 11, 1930  
 Towns, James Anderson—Tennessee.....  
 .....August 11, 1930  
 Turner, Wilson Hudson—Mississippi.....  
 .....February 16, 1931  
 Tyler, Ruby Louise Easterling—Missis-  
 sippi.....April 15, 1930  
 Veal, James Ross—North Carolina.....  
 .....November 19, 1930  
 Walker, John Edward—Maryland.....  
 .....March 21, 1930  
 Watson, William Arthur—Mississippi.....  
 .....January 12, 1931  
 Williams, John L.—Georgia.....  
 .....July 22, 1930

## PART III

REPORT OF THE BOARD OF CENSORS AS A  
COMMITTEE OF PUBLIC HEALTH

Dr. Partlow: The Board wishes the  
 State Health Officer, Dr. J. N. Baker, to  
 render this portion of the Report.

*To the Members of the State Board of  
 Health (The Medical Association of  
 the State of Alabama)*

Gentlemen:

I have the honor to submit herewith my annual  
 report of the Association's fiscal year now round-  
 ing into history. Alabama, in common with the  
 other states of our Union, has not escaped the

pinching hand of a universal financial debacle; added to this, many of her counties have been sorely stricken because of the blighting effects of a wide-spread drought. As a consequence of these unforeseen reverses, the appropriating bodies in such counties have been hard pressed to provide the funds necessary for the carrying on of the "basic activities" long recognized as essential. Public health work, because of its rather late arrival in the field, can hardly yet hope to successfully compete, in a financial way, with the more material things, like jails, good roads and good school houses. It must be said, however, that the health-consciousness of our people is being so rapidly developed, that the majority of the Courts of County Commissioners view, with genuine paternal pride, their latest "health baby" as the most promising of its brood, and are extremely loath to, in any wise, cripple its steady growth. At a most opportune time for us, Congress in January of this year, made available to the Surgeon General of the Public Health Service a sum of \$2,000,000, to be allocated to the various State Boards of Health in twenty-two of the drought-stricken states, for the preservation of health units and the prosecution of public health work. Alabama's participation in this fund will amount to something more than \$80,000, and through the wise application of these monies in those counties most needing aid, it is the belief and hope of your health department that none of the fifty-four counties now organized will be forced to abandon this work. On the contrary, the hope is here expressed that because of this federal aid, several counties which long have been planning to inaugurate health units, may be assisted in doing so. Your health department, therefore, desires to here express its appreciation and thanks to Congress, to the Surgeon General of the Public Health Service, to Senator Robinson of Arkansas and others, whose interest in this matter has made these funds available for our immediate use.

Another project now under contemplation with the Rosenwald Foundation and which will represent an expenditure, on their part, of some \$50,000 in Alabama, is that of an extensive and intensive survey and study of the venereal problem as it pertains to the large negro population in certain of our "black belt" counties. This enlarged activity is an outgrowth of a "demonstration experiment" conducted during the past year in Macon County among the negroes. In a rural section of this county some 3,600 negroes were examined and blood-tested, the results showing a more than one-third positive Wassermann. A comparison of this work as conducted in Alabama with a similar project in some of the other states, has resulted in a commendation of our efforts and a desire on the part of this Fund to continue and to enlarge these activities in Alabama.

During the past twelve months two new counties—Perry and Marion—have been added to those now possessing full-time health units, bringing the total to fifty-four out of a possible sixty-seven and representing nearly 90% of the State's population protected by this type of health service. No other state of the Union can make a similar boast; a boast which can largely be attributed to our unique and splendid type of organization which vests

leadership in public health affairs where it rightfully and logically belongs—in the organized medical profession.

Public health work is making such tremendous and rapid strides and is becoming so much of a specialty within itself that our workers, before taking up their particular duties, find urgent need for intensive training in field work. To meet such demand, we, aided in a financial way by the Rockefeller Foundation, have established, at Opelika, our own training school where health officers, nurses and sanitary inspectors receive such intensive training for a two-months' period. This phase of our work seems eminently worth while and makes strong appeal to our numerous visitors from all parts of the country.

Considerable time and effort have been expended by our central staff in an effort to strengthen the personnel and to enlarge the scope of activities of the health programs to be undertaken by these various health units. We have recently completed a series of district conferences, at which the entire personnel of each unit was in attendance and at which the manifold problems of each were freely and frankly discussed. This activity was something of an innovation and out of these conferences came many suggestions of value both to our field workers and to ourselves. We plan to have them repeated at various times throughout the year.

Upon assuming the duties of State Health Officer one of the crying needs of the department was the pitifully cramped quarters in which we were housed and the total lack of protection for our financial department against possible fire or burglary. Through the sympathetic co-operation of the Governor, additional office space, safe and filing cases have been provided, thereby making our quarters safer and more comfortable.

Our central laboratory in Montgomery, at a comparatively small cost, has been enlarged and expanded, so that now we are manufacturing our own rabies, typhoid and diphtheria vaccines, with an annual saving to the State of some \$15,000 to \$20,000.

The problem of malaria, which, during the years of 1928 and '29, had been rearing its ugly head in certain sections of our State, as was shown by an increased morbidity and mortality rate, seemed to demand rather heroic treatment at our hands. Consequently, after a careful survey of the problem and after an almost endless number of conferences with staff members, health officers and malariologists of the Public Health Service, a unified, state-wide program of assault, embodying drainage, ditching, larvicides, screening and therapy, was launched in several of the ten worst infected counties. In justification of the efforts thus put forth the following figures speak for themselves: in 1929 there were 430 deaths from malaria with a rate of 16.4; in 1930 there were 315 deaths—115 less than in 1929, and with a rate of 11.9. So far as available funds will permit, this warfare will continue with increased vigor, for we feel that this rate is yet too high.

In like manner, our state-wide program of sanitation, more particularly for the rural areas, is being slowly but steadily expanded in an effort to reach the remotest sections; the barriers of iner-



tia, of ignorance and tradition are always difficult to break through and to do so effectually calls for an added expenditure of time and energy in educational methods. In order to expedite this phase of our work, resort is being made, more and more, to the use of the moving picture film; and in order to give our teachings a more intimate touch and color, pictures with local settings and bearing directly on our own health problems, have been prepared, and are being well received.

The value of the radio, while difficult to numerically compute, is beyond question; health talks, around the noon hour, are broadcast each week by the health department and the responses and reactions from all parts of the State have been sufficiently gratifying to warrant a continuance of this means of publicity for reaching a rather large audience.

Effort is further made to reach a more limited group through health articles simply prepared and published in the *Farm Bureau Magazine* which, twice monthly, reaches the farmers of the State.

In this connection it may prove of interest to this body to learn that we now have under contemplation the establishing of a special division of education and publicity; we do not care to see this baby perish in the throes of a difficult accouchement, and so wisdom has prompted that this activity be postponed until this present Legislature could give assurance that there would be no curtailment of our present allotment. And, just here, may I not express the hope that this body may see fit to unequivocally endorse the adoption by this Association of a monthly journal—or as it has been aptly termed by an editor of one of the state journals—a “house-organ”. Your health department does not hesitate to state that we are engaging in so many novel and good activities that we simply must have some medium through which to convey such things to the organized medical profession, whose servants be it remembered, we are. Past experience has shown that any apparent opposition manifested on the part of the profession has sprung, not from a spirit of unwillingness to co-operate, but rather from a lack of full understanding on the part of the individual physicians, of the intent and scope of the particular activity engaged in.

We have just brought to a successful close, in co-operation with the medical forces of the State convict department, a somewhat laborious task of stamping out an epidemic of meningococcic meningitis which had gained considerable headway both in Kilby Prison and in one of the road camps in South Alabama. We feel that the prompt and efficient service which we were able to render through the Bureaus of Laboratories and Preventable Disease was no small contributing factor in the final outcome, and for this service your health department desires to particularly commend the heads of the bureaus, Drs. Havens and Gill, as well as the members of their staffs.

And in conclusion, just a final word regarding our state-wide program for tuberculosis:

Alabama has, as you know, no state-wide sanatorium for its tuberculous; she has, however fifty-four full-functioning health units, staunchly backed by a sympathetic medical profession. During the

current year your health department has succeeded in procuring the services of three well-trained, able chest clinicians. These men, accompanied by nurses and adequate x-ray equipment, are going into the various counties, offering to the doctors and the people, through the county health unit, this consultative and diagnostic service. To the members of this organization, the great value of such a service, alike to the doctor, the layman and to the entire community, need not here be stressed. The most gratifying thing, perhaps, to us has been the splendid response and appreciation for this service; and more particularly from the medical profession, which has been shown by their eager co-operation. As this phase of our work advances, the need is more and more acutely felt for some form of hospitalization. A bill has already been introduced in the Legislature, we trust, with bright prospects of becoming law, whereby the various counties, encouraged by state subsidy, will be stimulated to make at least a beginning in this problem of hospitalization. Communities must be taught the importance of making proper financial provision for their own tuberculous, just as they have already been taught that good schools and good roads are primarily their own responsibility. To our mind, the county sanatorium is the answer.

These are some—not all, by any means—of the things our health department is striving to accomplish.

And now, one parting word: No health officer could possibly have had shown him a finer spirit of co-operation on the part of the entire medical profession, nor a purer type of loyalty on the part of each and every member of his staff than has been shown to me during this trying period of testing and apprenticeship. These things have measurably lightened my burden and for which, I assure you, I am profoundly grateful.

Dr. D. T. McCall: Mr. President.

President Harrison: Dr. McCall.

Dr. McCall: I am very proud to move that the Medical Association of the State of Alabama by a rising vote endorse and commend the excellent work of our State Health Officer, Dr. J. N. Baker, and pledge him its heartfelt co-operation.

President Harrison: Is there a second?

A voice: I second the motion.

President Harrison: There is a motion that the Association by a rising vote express its hearty appreciation of the work done by our State Health Department during the past year, and pledge it the support of the Association in keeping up the good work.

All in favor of that resolution rise. (Thereupon the assembly stood.) It is carried unanimously.

State Health Officer Dr. J. N. Baker: Gentlemen, I thank you from the bottom of my heart.

Chairman Partlow: The next part of the Report of the Board of Censors is a financial statement of the receipts and expenditures of the State Department of Health, which will be published in the annual report of the department.

Dr. W. W. Harper: Mr. President, I move you that the reading of this section of the Report of the Board be dispensed with.

A voice: Second the motion.

President Harrison: You have heard the motion that the reading of this part of the Report of the Board of Censors be dispensed with. All in favor of the motion

will say "Aye." (Cries of "Aye.") Opposed "No." (No response.) It is so ordered.

Chairman Partlow: Thank you for your patience. That closes the Report of the State Board of Censors.

President Harrison: I believe it has been held by our attorney that when sections of the report have been adopted separately, the report must be adopted as a whole.

Those in favor of adopting the report as a whole will please say "Aye." (Cries of "Aye.") Opposed, "No." (No response.) It is adopted.

(WEIL ON HAY-FEVER:

in all patients, coinciding with variations in the amount of pollen in the air which in turn, varies with the temperature, humidity, rain-fall and the velocity and direction of the wind. From the first of September until frost, ragweed pollinates profusely. The hay-fever sufferer welcomes the first cold weather with joy for with it his suffering is at an end.

The number of cases that have come to my attention up to the present time is too small to afford any conclusions as to the relative importance of the various pollens. Of my twenty cases of seasonal hay-fever, eleven were due to rag-weed, one having symptoms also in the spring due to hickory. There were six spring cases, one due to elm, one to hickory, and four to pecan. The

Continued from page 19)

three summer cases were due to grass pollen.

## CONCLUSION

I have presented to you a table of plants responsible for hay-fever in Alabama with the dates of pollination of each. This table includes less than thirty species, but these cause the great majority of cases of hay-fever in Alabama. Knowing the time of year when the patient's symptoms occur, we can reduce the number of pollens to be used in our skin tests to ten or twelve. When a patient is found who fails to react to any of these pollens, diagnosis becomes a matter of research. In these obscure cases, familiarity with the plants growing in the patient's vicinity will be of great aid in the solution of this difficult problem.

## CHILD'S QUESTIONS ON SEX SHOULD BE ANSWERED

When a child is intelligent enough to ask questions about sex, he is intelligent enough to have them answered, asserts Guy McNeill Wells, master in biology in a boys' school, in *Hygeia*. Whenever a child raises a question, it is time for it to be answered.

A wrong answer and an evasion of the question attach themselves to the child's memory, and it is difficult to gain his confidence in order to substitute the proper answer.

The age of the child is not a criterion of his mental development. Age has no connection whatever with sex education, which should be begun as soon as the child wants to learn about the subject, no matter at what age he is. It is important that a child be prepared for puberty by answering all his questions about sex. Before the age of puberty, he has a more intellectual and unemotional attitude concerning the question.—Texas Journal of Medicine, May 1931.)

DIPHTHERIA MORTALITY IN LARGE CITIES OF THE UNITED STATES IN 1930. This report concerns the ninety-three cities dealt with in the recent article on typhoid, and the rates are calculated on the basis of the population figures used in that article. The number of diphtheria deaths in each city has been reported by the respective health department. As in the article on typhoid, the diphtheria rates for 1925-29 have been recalculated on the basis of the population figures of the 1930 United States Census. The report shows a remarkable decline in the general urban death rate from diphtheria throughout the country. In 1930 the lowest diphtheria rate yet recorded was reached, a rate a little more than half that obtaining five years before. Whether the recent sweeping reductions in diphtheria mortality in various parts of the United States have been caused by natural fluctuations in the disease itself or in the susceptibility of the human host, or whether and in what part they have been brought about by such preventive measures as toxin-antitoxin and toxoid immunization, is a matter on which convincing evidence may be forthcoming in the course of the next decade.—(Northwest Medicine, June 1931.)



## DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF ADMINISTRATION

J. N. Baker, M. D.

State Health Officer in Charge

### THE LEGISLATURE AND ORGANIZED MEDICINE

This is preeminently an age of organization and of "jining." Once having "organized," the "jiners" view as their next necessary and solemn duty, the gaining of proper legal recognition at the hands of a long-suffering and accommodating legislature. Ponderous bills, couched in recondite phraseology, and seeking to give recognition to this or that group, eternally clutter up our legislative machinery and consume the time of our lawmaking bodies which could more profitably be centered upon the weighty matters of state. "Less law and more enforcement" might help Alabama's present state. The above thought is suggested by the host of bills already introduced before the present Legislature, seeking to establish a status for many various groups, such as chiroprodists and chiropractors; barbers, cosmetologists and "Beauty Shoppes;" plumbers, journeymen and others. Each and all of these have more or less bearing on the various activities conducted by the State for which the Department of Health is held directly responsible.

The attitude of the Department of Health in all such matters is fixed and simple. So long as any proposed law neither conflicts with nor weakens any of its existing health laws, it has no primary concern in such law. Should it do either one of these two things, this department feels it to be its duty to the people of this State to point out and, if need be, to oppose any legislation, which might curtail or cripple the service rendered through the Department of Health.

The confiding manner in which the Legislature and every department of state lean upon the organized profession and its Department of Health for guidance in all matters pertaining to its people's health is both an inspiration and an impetus to strive for still greater things—May this confidence never be weakened nor destroyed!

That Alabama is not the only state battling for the high and much-needed requirements so essential in safeguarding its peo-

ple's health, is manifested by the following excerpt from a recent letter sent out by Dr. J. R. Neal, Chairman of the Legislative Committee of the Illinois State Medical Association.

"A desperate effort is being made by the cultists to force their various bills through the Senate.

"Sufficient pressure was brought to bear to the end that the Senate resolved itself into a committee of the whole last Thursday morning to hear both sides of the argument. This procedure is very unusual and, as a rule, is only resorted to in bills of extreme importance.

"The naprapaths and chiropractors both had speakers in favor of their respective measures. The osteopaths trusted the destiny of their measures to Senator Lee who introduced the osteopathic bills. The chiropractors had a lobby of more than two hundred in the gallery, who roundly applauded practically every statement the chiropractor spokesman made, and the member of your legislative committee who spoke in opposition of the bills, was complimented by booing and hissing."

### BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

#### AN EPIDEMIC OF DIARRHEA IN TROY

Commencing early in 1930 a few cases of diarrhea occurred in Troy. During the summer months no new cases occurred, although the existing cases continued active. Beginning again in December, 1930, however, and continuing through March, 1931, new cases made their appearance and led to an investigation in May of this year.

At this time histories were obtained from twenty-one persons who were reported to have had some form of chronic diarrhea. In addition to these, it is estimated that there were five or six others who could not be reached at this time. The following points were elicited:

1. Time of onset: 1930—January—1. March—1. April—1. May—3. December—3. 1931—January—3. February—3. March—6. Total 21.

2. Race: All White.
3. Age: 0-5—1    20-29—2    40-49—3  
60-69—4    15-19—3    30-39—5    50-59—2  
70—1.
4. Sex: Male-5    Female-16.

*ONSET:*

In 17 cases the onset was sudden, reaching full severity within forty-eight hours. In four cases the condition took several days to develop.

*SYMPTOMS:*

1. Diarrhea—watery stools at beginning. Mucous later.

No blood. Most frequent in morning. Brought on by food in some cases and by exercise in others. Stools varied from 3 to 30 per day.

2. Pain—absent.
3. Fever—absent.
4. Griping—not a prominent symptom.
5. Tenesmus—absent.
6. Nausea—present at onset of six cases.
7. Gas—borborygmus prominent complaint.
8. Weakness—progressive with the disease.
9. Weight—loss of weight in most cases.
10. Sleep—good.
11. Appetite—good.
12. Nervousness—increased in nearly all cases.

*DURATION:*

1. One case recovered completely in three months.
2. One child apparently recovered in two months.
3. All others showed some evidence of the disease. In a few instances disease is quiescent but recurs if there is any indiscretion of diet or exercise. Remainder are active after periods of one to fifteen months.

*MULTIPLE CASES:*

In 15 of the 21 cases there was only one case in the household. Three households had two cases each. Of these

1. Both occurred the same day.
2. One case 3/7/31—2nd case 3/18/31.
3. One case 1/15/31—2nd case 3/15/31.

*CONTACT:*

With the exception of the multiple cases, no history of contact.

*ENVIRONMENT:*

Living conditions good in all cases. All used city water and all had flush toilets. Milk and food could not be incriminated.

*LABORATORY:*

Three specimens of feces in 30% glycerin and brilliant green bile were obtained from twelve of the cases at intervals of about one week. Significant organisms have been isolated from three cases. From one of these (Mr. K.) a paratyphoid strain was obtained which was agglutinated by the patient's serum and may, therefore, have some etiologic significance.

The other case (Mrs. G.) yielded a strain of Morgan's bacillus. This culture was agglutinated by the patient's serum and also by the serums from ten other cases. In view of the fact that different strains of Morgan's bacillus are serologically distinct, one strain rarely agglutinating in serum produced from another strain, these agglutination tests take on added significance. Furthermore, this strain was tested against 25 normal serums, only one of which contained agglutinins for it.

Morgan's bacillus was also isolated in July, 1930, from one of the cases (Mrs. H.). This culture, at the time of investigation, was not available for further study.

It seems probable that Mr. K.'s case has a different etiology from the others. The clinical characteristics of this case also differ in some respects from the others.

Amoeba could not be found in one case examined at the State Laboratory nor in three cases examined by physicians.

*OBSERVATIONS:*

Over a period of fifteen months, there have existed in Troy a considerable number of cases of chronic diarrhea. Histories on a group of these indicate that in most instances the symptoms were similar and that probably the etiology was the same. In all cases diarrhea was the outstanding symptom.

The laboratory was unable to isolate amoeba or the dysentery bacillus but found a strain of Morgan's bacillus which was agglutinated by the serum of 11 out of 12 patients tested. This strain was only agglutinated by one out of twenty-five normal serums so it may have significance as the causative organism.



## BUREAU OF LABORATORIES

L. C. Havens, M. D., Director

THE FIELD RESEARCH LABORATORY AT  
ANDALUSIA

The Field Research Laboratory at Andalusia has been maintained for several years by the International Health Division of the Rockefeller Foundation in co-operation with the State Board of Health, for the investigation of public health problems, particularly those relating to hookworm control. Under the direction of Mrs. E. L. Caldwell, many important contributions have been made from this laboratory. During the past two years one of the major studies has been the relation of the pit privy to soil and well pollution. For the bacteriological investigations, much new equipment has been added, and Dr. L. W. Parr, of the University of Chicago, has been appointed chief bacteriologist.

The annual report for 1930 is particularly interesting. An immense amount of detailed work shows quite conclusively that most types of soil are very effective in filtering out bacteria. Experimental wells sunk at distances of only ten feet from the privy showed at no time any indication of fecal pollution. In the examination of over 16,000 samples of water from these wells, *B. coli* was recovered in less than 0.1%. These studies are being continued to determine whether the pit privy, which has been the chief mainstay in all sanitation programs, can be shown, under all conditions, to be an effective means of prevention of the filth-borne diseases.

Another important study made last year was on the rate of gain and loss of hookworms. As Mrs. Caldwell points out, hookworm control measures have been based on the assumption of a slow acquisition and an equally slow loss, extending over a period of years. If this is true, treatment of infected individuals, as well as general sanitation, is important in a hookworm control program. The growing child is thus given several years of normal development before a new worm burden is acquired, even though little progress can be made in improvement of the sanitary environment. Chandler, however, in some experiments in India, reached the conclusion that hookworms were rapidly acquired when oppor-

tunity offered, and equally rapidly lost when reinfestation was prevented. If this is true, then treatment has no place in control measures, because the individual will immediately reacquire his original number of worms. Mrs. Caldwell's studies confirm Smillie's conclusions that the loss of hookworms is normally a gradual process, extending over a period of several years. Studies of school children who had no opportunity for reinfestation during the eight months while attending school, showed that there was no loss of worms during this period. On the other hand, in any region, an equilibrium is established between the degree of soil pollution and the average severity of human infestation. These same children, during the summer months, going barefoot in polluted soil, did not show any material increase in their worm counts. Furthermore, a laboratory worker who had become infected four years ago in experimental work, has shown no material loss of worms over this period of time.

A third investigation described in Mrs. Caldwell's report is the use of hexylresorcinol in the treatment of ascariasis. A dose of one gram for adults and one-half gram for children removed 95-100% of the worms. No toxic effects from the drug were noted in any of the cases treated.

## BUREAU OF VITAL STATISTICS

W. T. Fales, Director

Ethel Hawley, Acting Director

THE PRACTICAL VALUE OF VITAL  
STATISTICS

The well-known statistician, Sir Arthur Newsholme, testifies as follows:

"Vital statistics are of practical value as a summarized record of facts, as a method of investigation, as a means of drawing attention to the incidence of controllable diseases, and as a general instrument of enlightenment and impetus to the control of remedial evils."

Last year when an intensive malaria control program was put into effect by the Department of Health, it was not undertaken until a careful analysis had been made of all available data as to the incidence and fatality of the disease. The campaign was then waged in those counties and portions of counties where the rate was found to be high. The morbidity and mortality rate for

the next few years will be watched as a check on the effectiveness of the measures instituted.

Sir Arthur Newsholme also says:

"Infant mortality is the most sensitive index we possess of sanitary administration, especially under urban conditions."

However, without complete registration of both births and deaths, an accurate infant mortality rate is unobtainable.

Aside from the value of vital statistics in preventive medicine, birth and death records are of increasing importance from a legal standpoint. Each month the Department of Health has requests for about 350 certified copies to be used in the administration of estates, the settlement of insurance, pensions, for passports, etc. This does not include about 500 cases where the records are searched and date of birth certified for admission to school and for working permits. Alabama has not kept a record of the number of requests for certified copies over a period of years, but the experience of New York State is interesting as showing the increased use of birth and death records being made by the public. In that state the number of certified copies issued increased 49% between 1920 and 1928.

## BUREAU OF INSPECTION

C. A. Abele, Director

The chief function of the Bureau of Inspection is the inspection of all types of food-handling establishments, barber shops, and hotels, to enforce the laws and regulations governing these phases of their operation which potentially affect the public health. This is a never-ending undertaking. The passage and the adoption of regulations comprise only the first step in health protection. The operators of food-handling establishments must be informed of the requirements of the regulations, must be educated to observe them, and sometimes must be brought before the proper authorities for neglect or refusal to observe them. The personnel engaged in the various food-handling industries is constantly undergoing change, so that it is very doubtful that the day shall soon arrive when everyone will be so completely informed concerning food-handling hygiene that instruction and en-

forcement of the regulations will be unnecessary.

The statutes prescribe the regular inspection of hotels and restaurants. The State Health Officer is ex-officio state hotel and cafe inspector. The State Board of Health is authorized and commanded to adopt rules for the operation and inspection of all types of food-handling establishments, and regulations governing the operation of eating establishments, bakeries, soda fountains, ice cream plants, bottling plants, and exhibition grounds' eating concessions have been adopted and promulgated.

In order to apply these regulations (except those pertaining to milk and milk products) the State was divided into three districts on January 1, 1928, with an inspector resident in each. Between October 1, 1927 and April 20, 1931, 48,053 inspections of hotels, etc., soda fountains, bakeries, bottling plants, ice cream plants, meat markets, abattoirs, candy factories, oyster shucking houses, fair grounds concessions, barber shops, etc., were made. This is an average of 400 inspections per man per month.

Because of these activities Alabama holds first rank among all the states on the control of fair grounds' concessions and carbonated beverage bottling plant hygiene. Not a county fair has been held during the past four years at which an inspector of the bureau was not present to enforce the regulations. The public may now eat at fair and carnival eating places and hot dog stands with as much assurance of wholesome foods, prepared and sold in a clean manner, as is vouchsafed them in the patronage of their hometown cafes. Since August 1, 1930, all carbonated beverage bottling plants selling beverages in this State have been graded, and display on delivery trucks the grade held. The improvement effected by this system has been striking. Only 7.8% of the 119 plants in operation on April 1, 1930 could be rated Grade A. On August 1, 77.2% had attained a Grade A rating. It is conservatively estimated, from data collected, that approximately \$100,000.00 was invested last year to build new plants or recondition existing plants for a Grade A rating.

The milk control program of the bureau will be discussed in an early issue.



## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

## MALARIA CONTROL

Due to a material increase in the incidence of malaria in 1929, the State Board of Health and the various county health units increased their efforts along the lines of malaria control. A more favorable season was experienced during 1930, and the incidence was correspondingly lower. However, county-wide programs have been inaugurated in eight counties through increased personnel devoting full time to the work. Four other counties are working on a county-wide basis with the normal personnel devoting increased time to malaria control work. In these twelve counties is found a major malaria problem.

Equipment for visual education with special motion picture reels dealing with the various methods of malaria control has been placed for all time use in eleven counties, and will be extended to others. An earnest effort is being made to reduce the incidence of this disease which has great economic aspects.

## BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

This bureau maintains a promotional service in the interest of all the infants and children of Alabama; in the interest of expectant mothers; and in the interest of a closer relationship between the practicing physician and his patients, especially the younger children and their mothers.

The county nurse is a concrete expression of the service for which the bureau stands. She teaches a patient why she should consult a physician early in her pregnancy; why she should keep her baby under a physician's supervision until his safe growth is assured; why it is safer and more economical to consult a physician frequently with regard to the health of her children.

The teachings of the county nurse are making it easier for patients to know how to follow closely the directions of physicians. Patients are becoming better able to recognize promptly the conditions about which physicians should be consulted.

Physicians of Alabama are urged to give county nurses an opportunity to discuss with them the subject matter which they are trying to teach. If they disapprove, a frank discussion of the subject matter should be had before the county medical society to arrive at a selection of material which the county nurse may teach.

In the absence of a county nurse and county health service, a tabulation of the births, stillbirths, maternal deaths and deaths under one year by counties may be interesting. These facts may reveal profound health needs and lead to the organization of a full-time county health unit.

*County Society News*

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

## COFFEE COUNTY

W. A. Lewis, Secretary

At a meeting of the society on June 4, Dr. E. L. Gibson of Enterprise read a paper memorializing deceased members, particularly Drs. Henry Randolph Bradley and Porter Thomas Fleming. The discussion brought out many memories of other deceased members.

## CULLMAN COUNTY

R. B. Dodson, Secretary

The society met in regular session at 7:00 p. m. on June 1 at the Alabama Hotel, Cullman, with Drs. Anderson and Greer of Decatur as visitors. Dr. Greer read a paper on Nuclear Cell Shelf.

Dr. V. P. Hughes has moved from Cullman to Eva in Morgan County.

Drs. E. D. McAdory and R. B. Dodson will engage in postgraduate study at Vanderbilt beginning July 22.

## GENEVA COUNTY

M. E. Doughty, Secretary

Dr. L. S. Nichols has been re-elected county health officer, his term to begin July 1.

It is reported Cupid might contribute to the happiness of Health Officer Nichols'

vacation which was scheduled to begin June 15.

The society has invited the Southeastern Division of the Association to meet at Geneva, August 11. Dr. G. W. Williamson of Hartford, a member of the society, is Vice President of the Division.

#### HOUSTON COUNTY

F. G. Granger, Secretary

Dr. F. G. Granger of Ashford has been elected health officer to succeed Dr. Russell E. Neff who died April 17. Dr. Granger will assume office July 1. Dr. M. S. Whiteside has been Acting County Health Officer since Dr. Neff's death.

The meeting of the society June 5 was devoted to a consideration of malaria. Dr. D. C. Haisten read a paper on the anemias following malaria. Motion pictures of the habits of the mosquito were shown.

#### JACKSON COUNTY

M. H. Lynch, Secretary

The Jackson County Health Unit in co-operation with the society held a chest clinic May 19-22. 91 people were examined and 31 children tuberculin tested. On the last day the society met for a discussion of tuberculosis. Drs. S. B. McPheeters and P. W. Auston, clinicians of the State Department of Health, lectured and demonstrated x-ray films of cases.

#### LAWRENCE COUNTY

R. E. Harper, Secretary

At the June meeting of the society, Dr. J. F. Huey, President, read a paper on "The Country Doctor."

Lawrence County has ten physicians, all identified with the society. The society meets the first Tuesday of every other month.

#### MOBILE COUNTY

W. W. Scales, Secretary

Drs. W. L. Heiter, Mobile; R. H. Cochran, Jr., Mt. Vernon; and John C. O'Gwynn, Jr., Mobile, have recently become identified with the society.

Dr. C. C. Perdue and Miss Jessie Moore were married April 27; Dr. W. R. Meeker and Miss Isabelle Cowan, June 9. Dr. Emmett Frazer entertained for Dr. Meeker at his home at Cottage Hill, Saturday evening, June 6.

#### MONTGOMERY COUNTY

J. L. Bowman, Secretary

Dr. J. R. Garber, Birmingham, addressed the society Saturday evening, June 13. The meeting was held at the Jefferson Davis and was a dinner affair.

#### MORGAN COUNTY

H. C. McRee, Secretary

At a regular meeting of the society June 4 Dr. E. M. Chenault, after commending the work done and the good accomplished by the chest clinic recently held in the county, made the following motion: "That the secretary be instructed to write the State Department of Health and request that a second clinic be held at the earliest opportunity." The motion was unanimously adopted.

#### PICKENS COUNTY

V. L. Ashcraft, Secretary

Dr. John Davis, Gordo, long identified with the practice of medicine has retired from active duty but retains his interest and membership in organized medicine.

Dr. E. P. Hill, McShan, has returned to his home from the Druid City Hospital, Tuscaloosa, where he has been under treatment.

Plans are being made for the second of a series of chest clinics sponsored by the State Department of Health, in co-operation with the society and the local health unit. The first was held early in the year.

#### DEATHS

Foy Earnest Blue, Bessemer, June 6.

John Daniel Sinkler Davis, Birmingham, May 16.

Thomas Edmund Dryer, Huntsville, May 27.

Abner Farned, Russellville, May 17.

John David Morris, Piedmont, May 22.

James Cephas Smith, Browns, May 26.

Chas. Elias Williams, East Tallassee, May 3.



## *Book Abstracts and Reviews*

PRINCIPLES AND PRACTICE OF OBSTETRICS, DeLee, 5th ed. W. B. Saunders

In the revision of his book, Dr. De Lee has handled his material with his usual thoroughness and conservatism. Several chapters have been revised, almost completely rewritten. Most of the illustrations are new. Of great interest and value are the chapters on separation of the placenta, placenta praevia, and rupture of the uterus. The treatment of eclampsia is stressed, the Stroganoff method, the radical operation, and the use of magnesium sulphate deserving first place in importance. The use of sodium amytal is not mentioned. The chapter on postpartum hemorrhage should prove of value to everyone who does any obstetrics. His description of the use of forceps is a masterpiece. Altogether the book is a gem. Obstetricians, unborn generations, and future mothers are indebted to Dr. De Lee for his excellent book.

F. M. T. T.

### MONOGRAPHS ON ALLERGIC DISEASES

In 1922, Lea & Febiger, published William Scheppegegrell's "Hay-Fever and Asthma, Care, Prevention, and Treatment." Its name is a misnomer in that it contains little information on the subject of asthma, but it contains a classic description of hay-fever. It enumerates the plants responsible for hay-fever, gives their distribution and season of pollination, shows by illustration the appearance of these plants and of their pollens. It contains a list of hay-fever resorts which may be a source of help in selecting a location where hay-fever sufferers can be free from symptoms. In spite of the fact that this book is not a recent publication, it is a valuable addition to the library or anyone interested in hay-fever.

Ray M. Balyeat is one of those rarely encountered medical men gifted with ability to write in an entertaining manner. His manual of allergic diseases is written in such simple language that the layman can understand it and so accurately that the

specialist can find no fault with it. It is packed with information and profusely illustrated. It covers the subjects of asthma, hay-fever, vasomotor rhinitis, migraine, urticaria, and eczema. It is not only of great interest to the physician but of equal value to the patient who, by reading through its interesting pages will acquire an understanding of the nature of his illness which will enable him to assist his physician in a more expeditious determination of the cause of his symptoms. The name of this very interesting book is "Allergic Diseases, Their Diagnosis and Treatment". The publishers are F. A. Davis & Co.

William W. Duke's "Allergy-Asthma, Hay-Fever, Urticaria, and Allied Manifestations of Reaction", published by the C. V. Mosby Co., is an excellent book on the entire subject of allergy. There is a very comprehensive chapter on the plants that cause hay-fever. Other chapters deal with the usual and rarer proteins that may produce allergic symptoms. Duke is one of the outstanding contributors to the subject of physical allergy and his chapter on allergy due to heat, cold, and sun-light is full of interest.

Recent observations have made it appear likely that food sensitizations may be responsible for many varied symptoms—canker sores, mucous colitis, intestinal colic, bronchial asthma, eczema, urticaria, angio-neurotic edema, migraine, neuralgia, vasomotor rhinitis, arthritis, bladder symptoms, and some cases of epilepsy. Lea & Febiger have published a book by Albert H. Rowe on "Food Allergy—Its Manifestations, Diagnosis, and Treatment. The author cites case records to prove the part played by allergy in producing the above symptoms and he outlines a series of well balanced diets, through the use of which, by a process of elimination, the physician is able to determine the food which is responsible for symptoms. The author mentions the fact that skin tests are not always of value in food allergies, but the results of the trial diets are never in doubt. After reading this book, one is impressed with the tremendous field in medicine which offers hope of solution through the study of allergy.

C. K. W.

# THE JOURNAL

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## MENSTRUAL DISORDERS THAT WILL BE OF INTEREST TO THE GEN- ERAL PRACTITIONER\*

LUCIUS E. BURCH, M. D., F. A. C. S.  
Nashville, Tenn.

I am not unmindful of the great honor your president has conferred on me in inviting me to address the Medical Association of the State of Alabama. In extending this invitation he asked that I bring before you a practical subject that would be of interest to the general practitioner. This I have endeavored to do for it is to the general practitioner that the female with disorders of menstruation first goes for relief.

The normal woman at the menarche or the onset of menstruation begins to bleed from the uterus for 3 to 6 days each month. This regular cycle continues until the menopause is established.

I will not attempt in this brief paper to give you the theories of menstruation from the days of the ancients down to the present time. I might say, in passing, to those of historical bent, that they are both amusing and interesting. Why should a woman menstruate?

A bird builds its nest in order to prepare a home for its young. The same principle applies to the human female. Menstruation is the breaking down of the nest that the female has prepared for the reception of the fertilized ovum. It is in a sense "the abortion of an unfertilized ovum." There are certain cyclical changes that regularly take place in the endometrium following menstruation. Each stage is an advance

over the preceding one just as in the building of a house. The completion of the endometrium or the residence of the fertilized ovum occurs on the 28th day. By curetting the uterus and making a microscopical study of the scrapings one can determine the exact stage of the menstrual cycle.

What is it that makes the uterus construct this nest or residence? There is an architect for this house which is built each month for the fertilized ovum. This architect resides in the anterior lobe of the hypophysis. He sends an impulse or message to the contractors to begin construction. These contractors are found in the ovary, and each contractor supervises the construction of certain parts of the residence.

It is well known that if the ovaries are removed menstruation ceases. If they are removed and transplanted into some other part of the body menstruation will return. The cycle will continue as long as these transplanted ovaries continue to functionate. This conclusively proves that the ovaries through their internal secretions form the stimuli that bring to the uterus the skilled laborers that erect the edifice for the fertilized ovum.

Once a month a graafian follicle in the ovary ruptures and an ovum is extruded. This process is spoken of as ovulation and it usually takes place midway between the menstrual periods. It takes the ovum seven to ten days to make the journey from the ruptured follicle to the uterus. Following the rupture of the follicle and at its site is formed a yellowish body which is spoken of as the corpus luteum. This body begins to regress when menstruation begins. On the other hand if menstruation fails to take place on account of conception having occurred the corpus luteum remains and in-

\*Read before the Association in annual session, Birmingham, April 23, 1931.

\*From the Department of Obstetrics and Gynecology, Vanderbilt University Hospital.



creases in size and is spoken of as the corpus luteum of pregnancy.

It is now known that the follicles of the ovary have an internal secretion spoken of as oestrin, or the female sex hormone. This substance is found at times in the blood, the urine, the menstrual fluid and the placenta. It can be isolated and if injected into the lower animals it produces oestrus or heat. The hormone or internal secretion from the corpus luteum has also been isolated and it is spoken of as progesterin. Its function is known from experimental studies and clinical evidence.

The hypophysis or architect sends the stimulus or order to the ovaries or contractors to start construction. One contractor, oestrin, immediately starts his laborers constructing in the uterus the early stage of the endometrial cycle. In the corpus luteum resides another contractor—progesterin, whose duties are just as important as those of the oestrin or female sex hormone. After the ovum has been expelled from the follicle the house or nest advances to the stage of premenstrual congestion. Both contractors now have their laborers out in full force, oestrin controlling the structure of certain parts of the edifice, corpus luteum or progesterin controlling others. At the end of the 27th to 30th day the house is completed. Should conception take place the corpus luteum persists as the corpus luteum of pregnancy and its duty through its internal secretion is to carry out the construction of the decidua and later on the placenta.

The hypophysis, or the motor of the ovary during pregnancy, puts out an abundance of internal secretions in the blood. A part of this hormone is thrown off in the urine. Based on this fact Aschheim and Zondek have brought out a most reliable test for pregnancy. They inject the urine of pregnant women into immature female mice and the pituitary hormone so stimulates the ovaries of the mice that a great enlargement takes place. This enlargement is characteristic of pregnancy. It is a test that is found to be reliable in 96 to 98% of cases.

If the ovum fails to become fertilized the house or nest falls to pieces. This falling to pieces is menstruation. At the end of the period of menstruation the endometrium

has entirely regenerated and before the new house is started it remains stationary for a few days. This is spoken of as the period of rest. Such is the manner in which normal menstruation occurs, and this establishes the basis for studying the abnormal bleeding such as menorrhagia or metrorrhagia.

The most common of all causes of uterine bleeding is spoken of as hyperplasia of the endometrium. This is in no sense of the word an endometritis—in fact, endometritis is a rare disease and plays but little part in abnormal uterine bleeding. The endometritis that was formerly described in the text-books of gynecology was nothing more than the normal cyclical changes that took place in the endometrium.

Hyperplasia signifies that a mix up has taken place among the contractors and laborers who are constructing the residence for the future home of the fertilized ovum. The corpus luteum fails to appear. This is due to the fact that the architect residing in the anterior lobe of the pituitary has not sent the order or impulse to the ovary to ovulate and therefore the corpus luteum can not be formed. On the other hand the contractor residing in the follicles of the ovaries works on. The result is that the oestrin or female sex hormone keeps his laborers hard at work but unaided by the corpus luteum. The result is a most natural one—the rafters, girders and supports of the house are lacking, the walls that are being erected crumble and fall from lack of support and this produces a flow of blood at times profuse, at other times only a stain. This mix up is spoken of as endocrine or ovarian dysfunction.

Hyperplasia is a distinct pathological entity. It is characterized under the microscope by the Swiss cheese pattern of glands and it is always possible to make a diagnosis of this condition by curetting the uterus and examining microscopically the scrapings. Dr. John C. Burch has studied this question experimentally. These experiments indicate that hyperplasia is the result of an excess of oestrin, and a deficiency of corpus luteum. We have at Vanderbilt some beautiful specimens obtained at operation which show this deficiency of the corpus luteum. Numerous follicular cysts may be found in the ovaries. The cysts

may be of sufficient size to palpate per vagina but as a rule they are so small that they can not be felt. Shaw of England first called attention to the common occurrence of a cystic condition of one ovary associated with hyperplasia of the endometrium.

The bleeding from hyperplasia may be in the form of a menorrhagia or metrorrhagia or both. It occurs at all ages during sexual life but is more common around the menarche or the menopause. As previously stated it is due to an ovarian dysfunction or an absence of one of the internal secretions. The corpus luteum fails to form and functionate while the other secretion, the female sex hormone or oestrin is present.

Any constitutional disease or any disease of the genital apparatus may predispose to hyperplasia. There are only two other common etiological factors producing abnormal uterine bleeding, viz., accidents of pregnancy, either uterine or extra-uterine and bleeding from ulcerations, of which cancer is the greatest offender. The bleeding associated with fibroid tumors of the uterus is usually due to hyperplasia. In a certain number of fibroids the bleeding is brought about by an interference with the blood supply to the tumor which causes ulceration and this ulceration is the factor that produces the bleeding.

The diagnosis of hyperplasia can be and should be made by the practitioner. A complete physical and pelvic examination including the common laboratory aids should invariably be carried out. Every case of abnormal bleeding, regardless of age or station in life, should call for a pelvic examination. Many lives are lost annually by neglecting this rule.

The pelvic examination should not be confined to a digital exploration of the parts but should invariably include the careful inspection of the cervix through a speculum and under a good light. All of this can be done by any general practitioner. Special or expensive instruments are not necessary nor is special training for these maneuvers essential. Should an ulceration of the cervix be found or an area on the cervix that looks suspicious of malignancy it should call for an excision of a small bit of the suspected area. This should

be placed in a 5% formalin solution and sent to a competent pathologist. Rubbing alcohol is an excellent substitute for the formalin solution. I suggest as an instrument for biopsy the ordinary Rongeur forceps. The cervix is steadied with a volsellum forceps and a bit of suspected tissue is excised. A local or general anesthetic is not required as the cervix is not an acutely sensitive organ. The suspected bit of tissue can also be easily excised with scissors and forceps. This step can be carried out in any hut or hamlet and if it only were, how many thousands of cases of malignant disease would be discovered and treated in an early stage.

Should the cervix appear normal or should the biopsy of a suspected area prove negative one can safely tell his patient that cancer of the cervix is eliminated. The next step in making a diagnosis is to curette the uterus. This is done for diagnosis and not as a therapeutic measure. These scrapings should be examined by one who is skilled in gynecological pathology. This is a most important step as hyperplasia or cancer of the body of the uterus is easily diagnosed from the scrapings. Treatment should not be instituted until cancer is eliminated and a definite diagnosis of hyperplasia is made. As previously stated, any constitutional disease or any disease of the genital apparatus may predispose to it, therefore the first step in treatment is to correct the abnormal condition either constitutional or local. In the majority of cases surgery is not indicated and for this reason the general practitioner is the one to effect a cure. For the cases that come up around the menopause, radium, if not contraindicated, offers an ideal remedy. It is free of danger, its use only entails a few days in the hospital and it cures over 95% of the cases. The cases that appear at the menarche offer a more difficult problem from a therapeutic view-point. In a certain number of these young women the endocrine dysfunction is due to a lack of thyroid secretion.

It is not unusual to find a basal metabolic rate of from 15 to 30 minus. Thyroid extract in these cases has a most beneficial effect. One or more blood transfusions are often indicated. If a suitable donor who is pregnant can be obtained I strongly advise



using her. The advantage of using a pregnant woman as a donor is to get the hormone from the anterior pituitary which is found in large quantities in the blood in pregnancy, hoping that this hormone will stimulate the ovary to a luteum formation. I am now using this experimentally in these cases as the opportunity offers, both transfusions with pregnant women as donors and also the injection under the skin of the blood of the pregnant women. The results so far have been highly satisfactory but the cases have been too few to date to draw definite conclusions. A high protein diet—iron and liver—are excellent aids.

Hyperplasia is not a dangerous condition unless the predisposing cause is a grave constitutional disease—the prognosis as a rule is therefore good. In the younger patients, however, it may recur at any interval of a year or more if something should supervene that would produce an endocrine dysfunction. I will not attempt to discuss the treatment of bleeding as a result of cancer or the accidents of pregnancy as this is fairly well standardized.

In conclusion I desire to emphasize the following:

- I. Abnormal uterine bleeding is due to three conditions—
  1. Hyperplasia
  2. Ulcerative lesions—cancer is the most common example of these.
  3. The accidents of pregnancy either uterine or extra-uterine.
- II. All cases of abnormal uterine bleeding call for a complete physical examination of the patient which must include a careful pelvic—both digital and with the speculum.
- III. A confirmation of the diagnosis can be obtained from the laboratory in each of the three etiological factors.

#### DISCUSSION

*Dr. R. S. Hill, Montgomery*—A noted orator from Mississippi said, on one occasion, in words to this effect, "When eagles fly aloft, bats should take to the loft." This great old eagle friend of mine has flown aloft and we little bats should take to the loft. I feel that I express the feeling of all here when I say that we have heard a magnificent paper; none superior has been read before this Association and we have had many great papers read.

I am not going into the pathological or the etiological condition as Dr. Burch has done, but I believe I can call to the mind of the general practitioner a very simple method of relieving some of

the cases of excessive menstruation. We know that radium is being generally used, but some of you in the smaller towns may experience difficulty in getting radium to use on your patients. Even if you could get it, you may have a little hesitancy in using it since you don't have a sufficient number of cases to give you that self-confidence that is possessed by the men who are doing this work as a specialty. The method of relieving hemorrhage that I have in mind is a local one. I refer to the application of formaldehyde. By simply injecting a small quantity of formaldehyde in the uterus, you can control fully ninety per cent of the bleeding referred to by Dr. Burch as due to hyperplasia.

In doing this, however, I would warn you to have the cervix well dilated so the excess amount of formaldehyde may escape. It can be done in your office. No anesthetic is required. Occasionally you will have a patient to complain of pain in the abdomen, but the pain will pass off in five minutes.

Another thing I would warn you to do. Thoroughly mop out the vagina after you have used the formaldehyde to prevent any that has escaped from affecting the vaginal wall.

*Dr. M. Y. Dabney, Birmingham*—I think this is the simplest, and at the same time the most excellent scientific paper on menstrual bleeding I have ever heard. It has given us the very latest work on hormones, and yet Dr. Burch has done it in such a way I am sure every one here has a very good idea of what he wanted to convey.

There is another point I should like to make: All doctors have mothers who consult them about their young daughters, girls just beginning to menstruate. In the first three years of menstruation a child may menstruate one time and then skip a year or a year and a half or two or three years, or a child may menstruate very freely during the early years of menstruation. This concerns the mother a great deal. She wants the doctor to give some drug for it. I think we should remember that at puberty there is a profound change in any child's life, either a boy or a girl, and we must not expect nature to effect a profound change always in a regular and steady manner. I think the best thing to tell the mother is that if the child is not seriously handicapped by anemia, or excessive bleeding, and if she is not worried, and if there is not excessive nervousness, to let the child alone. I would say ninety-nine per cent of the cases will turn out all right and menstruate regularly, and will not need any meddling interference. On the other hand, we have cases that are so extreme that something must be done. The other day I saw a young woman nearly eighteen years old who started menstruating at fourteen. She menstruated every day. I questioned her very carefully and found that once she had gone out West on a little visit and had failed to menstruate for fourteen days. Very rarely in her life had she missed more than one day at a time. That was a terrible thing. The girl had to drop out of high school. She had to wear a guard every day. The metabolism was normal. The child was growing up. She had to have an examination. What was I to do? I did something I think most of us do not like to do. I gave that child a very small application of radium. In the East they will

tell you not to give over 500 milligram-hours of radium. If you give that much to a child of that age you are going to produce an artificial menopause. I gave the child about 250 milligram-hours of radium. It is always safer to give a small amount, because if you can give radium at all, you can give it a second time, and you avoid the danger of bringing on an artificial menopause.

Now, that was a child with a normal basal metabolism. I have another woman about the same age who floods all the time. She has a basal metabolism of about plus forty. We put her to bed and put her on the Minot-Murphy diet. We worked up a Wassermann and a complete blood picture and with this diet we increased her blood about ten points a week. We considered a transfusion, but her blood was picking up, so we did not feel that we should resort to a transfusion when nature was remedying the situation. That is a situation I should like to ask Dr. Burch about. We have been giving her some small doses of Lugol's solution periodically just before her menstrual period. We have been hoping we could produce a change in the thyroid that would decrease the bleeding. We haven't had her under observation sufficiently long to decide what we are going to do.

In all menstrual disorders cancer must be considered. If you do not rule out cancer, you have not made a complete examination. The general practitioner is capable of ruling out ninety per cent of the cases of cancer of the uterus. It does not take an expert to do that. Ninety per cent and more of the cancer of the uterus is on the cervix. Any doctor can diagnose a cancer of the cervix or he can say he is in doubt about the case. If it is cancer you are going to know it. If you are in doubt you can get somebody else's opinion.

Cancer is not confined to the early ages. I have a woman of about eighty who is developing cancer now. She was developing it to such an extent she came to seek medical service.

*A Voice:* I want to ask Dr. Hill what per cent of formaldehyde he recommends.

*Dr. R. S. Hill:* Full strength, forty per cent.

*Dr. M. Y. Dabney:* May I ask a question? I want to ask Dr. Hill, if he does not think there ought to be a word of warning about the capacity of the uterus? The average uterine capacity varies, but I should say it is from one to two cc. If formaldehyde gets out into the tubes I think there would be serious trouble.

*Dr. R. S. Hill:* I think Dr. Dabney's question is answered by my warning to have the cervix thoroughly dilated so that the excess may return.

*Dr. M. Y. Dabney:* Do you remove the cannula right away?

*Dr. R. S. Hill:* Remove the cannula and if the cervix is thoroughly dilated the excess amount of formaldehyde will return.

*Dr. Burch (closing):*—I want to thank both Dr. Hill and Dr. Dabney for their discussion. I was much interested in what Dr. Hill had to say about formaldehyde. Under careful supervision and with every care, I am going to try that out sometime, but first on the lower animals. I will tell you why.

Dr. Chas. Mayo, about two years ago, brought out what he called a chemical hysterectomy and,

of course, the news spread like wild fire. He used chloride of zinc. I was one of his followers. I used it. I had a patient to die on the table, and then on looking up the literature and especially the German literature, I found chloride of zinc was one of the most powerful of all poisons. This zinc had gotten into the circulation and had killed my patient on the table, and from that time to this I have never done a chemical hysterectomy.

Another sad experience: My colleague, Dr. Horton Casparis of the Department of Pediatrics, was once treating an eight year old girl for vulvovaginitis by irrigating the vagina with mercurochrome. The child developed a general peritonitis and died. A postmortem was made and the peritoneal cavity was found full of mercurochrome. In other words, the tubes were unusually patent and the irrigation went out in the peritoneal cavity.

I would think if you would carefully carry out the technique Dr. Hill has described of dilating the uterus, which is a safeguard, and not using too much force, it would be a splendid procedure and I am very glad indeed to get the suggestion.

Dr. Dabney has brought out, and I think wisely, the danger in the use of radium in young women. There is always a possibility of bringing about an artificial menopause. I might say, however, that a young girl's ovaries are much more resistant to radium than are the ovaries of a woman thirty or thirty-five or even forty. Nevertheless there is always a chance that an artificial menopause may be produced and I would suggest, or at least re-emphasize, that you use a small amount and if necessary repeat the application. I think, however, that radium in young girls should be the last resort.

Now, what I was especially anxious to bring before the practitioners of the State of Alabama was this: Menstrual disorders, as a rule, should not be treated by the specialist or by the surgeon or by the gynecologist. You are the ones to make the diagnosis, and in a great majority of cases, you can make the diagnosis. You may need laboratory aid but you can always get that, and if I can bring before you the necessity in these cases of abnormal uterine bleeding of a careful history and a most careful physical examination, I will be satisfied. Don't center your attention on the pelvis. Center your attention on the general condition of the patient, and in the great majority of cases you will find that a general condition is responsible.

Next, make a most careful examination of the cervix. Any man can do that, any medical student can do that, and if there is a bit of tissue that looks the least bit suspicious, send it to a pathologist.

One other point that I want to emphasize. If you find that the trouble is due to a general condition and bleeding still continues, then I would advise you to have done or do yourself a curettement—not for a therapeutic purpose (a curettement is not going to cure your patient)—but simply to get scrapings to send to a competent pathologist. You do not need any special drug to send them in. Pick up your rubbing alcohol that you can get any-



where, put the scrapings in it and send them in that way.

Now, as to thyroid cases. The best results in thyroid cases are obtained when you have a hypothyroidism and not a hyperthyroidism. Hypothyroidism will yield splendidly to thyroid extracts.

I can't say yet what effect treatment by the use of blood from a pregnant woman is going to have. I have used it in six cases and all so far have been a success. The object of using the blood of a pregnant woman is to get the anterior pituitary hormone which will stimulate the ovaries to ovulate and form a corpus luteum. The reason these women with hyperplasia keep on bleeding is because there is a lack of corpus luteum, and if you can give something that will stimulate the ovaries to form a corpus luteum, you are going to bring about a cure.

I think transfusion from a suitable donor is the ideal method. Used with a regular diet and iron and ammonium citrate, which I think are the ideal remedies, you will soon get the patient back to normal. I believe, though, you will get them back to normal a great deal quicker by using transfusions.

I want to thank you again for your kind attention and assure you it has been a great pleasure to be with you.

## THE DIFFERENTIAL DIAGNOSIS OF CERTAIN FEVERS\*

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To the fanciful mind a striking similarity might seem apparent between fashions in politics (political movements) and infectious diseases; between diseases of the body politic and of the body physical.

In the days of Bryan and the silver flood, yellow fever inundated the Southern States. When open saloons were to be found on every corner, typhoid fever was to be found in every hospital. Bryanism passed, and with it went the yellow scourge. The saloon was banished, and concurrently typhoid fever became a less potent menace to the public health.

Today the sinuous bootlegger has established his footing in every city, and undulant fever has invaded practically every state in the union.

In Europe, communism and typhus fever are destroying Russia while the unemployment dole and tuberculosis are lowering the vitality of England.

It is not within the province of this meeting nor of this paper to deal with the hy-

perpyrexia of political movements, but we may well devote a share of our attention to the fever that goes with disease.

Fever, as such, is merely an evidence of bodily reaction to infection. Of itself it means nothing from a diagnostic standpoint. As an accompaniment to disease of obvious type, such as measles or varicella, it may be ignored so long as it remains within bounds. In many patients, however, we encounter fever as a prominent symptom the causation of which is not evident on clinical examination, and the true significance of which may tax one's diagnostic acumen to the utmost. It is to this type of fever that your attention is invited. No attempt will be made to discuss the details of diagnostic procedure. Rather it is intended to emphasize certain essentials in anamnesis and examination that are considered necessary precursors to any form of fever therapy.

It has been said that the chief function of a good doctor is to make a diagnosis and that having been determined, anyone can outline a plan of treatment from the text books. The germ of truth in this aphorism is particularly applicable to fevers. Obviously one does not wish to treat the fever, but to discover and eradicate the cause of the fever. More than one child with fever, leucocytosis and pain in the right abdomen has been operated on for appendicitis when the real trouble was pneumonia. Innumerable patients having febrile reactions following chills have been put on quinine when the etiologic agent was not the malarial plasmodium.

As with fever, so with the leucocyte count.

The studies of Dr. Garrey and his associates at the Vanderbilt Hospital on leucocytic variations in normal persons are most interesting. These investigators found that the white cell count in a normal person at rest, mentally and physically, is between 5,000 and 6,000 per cubic millimeter. This is the basic norm, and is constant in a given person from day to day. A basal count of over 7,000 is evidence of mental or physical discomfort. The largest possible meal, taken at rest, will not cause an increase in the basal count, but passive or active exercise will raise the count instantly, the increase in count be-

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ing proportional to the severity of the exercise. In a quarter mile race, lasting less than one minute, the count rose to 35,000 per cubic millimeter.

Nervous and psychic factors may produce a high grade leucocytosis. Pain alone may raise the count to as much as 20,000, and even acute cutaneous stimulation, such as a dash of ether, may raise the count from a basal 5,000 to eight or even ten thousand.

Mild grade physiological leucocytoses were found to be due chiefly to an increase in polymorphonuclear neutrophils, while very high grade leucocytoses showed a preponderance of lymphocytes. These findings, so at variance with common belief, do not prove the leucocyte count worthless: they merely warn us that the leucocyte count must be evaluated as merely one link in the diagnostic chain of evidence, just as fever is another link.

Malaria, typhoid and tuberculosis constitute the febrile triad most frequently encountered by the practitioner. One is tempted to add rheumatic fever, particularly that of childhood, to this group. Certainly it is essential that typhus fever, tularemia and undulant fever, because of their increasing prevalence, must be thought of when one is confronted with a diagnostic problem in which fever is a prominent symptom.

It is noteworthy that certain symptoms and signs are common to, or may occur in the course of, all these diseases.

Among them may be mentioned malaise, headache, fever, dyspepsia, intestinal disturbances, bronchitis, joint pains, chills, sweats, skin rashes, enlargement of the spleen and abnormalities of the blood and of the urine. A patient with any group combination of these signs and symptoms should be studied carefully rather than subjected to an extemporaneous attempt at specific treatment based on clinical judgment alone. Such a patient should be given only such symptomatic medication as is definitely indicated pending the establishment of an exact diagnosis.

The danger inherent in the quinine therapeutic test for malaria cannot be too strongly stressed. If the disease be malaria, blood studies will establish the diagnosis promptly, provided no quinine has

been given before the blood specimens are taken. If it be not malaria, much valuable time will be lost while awaiting the result of the quinine test, and there is danger that large doses of quinine may have a deleterious effect on the patient. Stated another way, a patient with malarial infection needs a lot of quinine and needs to keep it up for two months, or longer. The patient who has no malaria does not need, and may be harmed by, even one dose of quinine.

A thorough history ranks first among the essentials in diagnostic procedure. Important leads may be derived from such points in the history, as, recent travel in a tropical country, sojourn in a district where typhoid is known to be prevalent, the habitual use of raw milk, association with a tuberculous person, occupation as a butcher or as a woodsman, the presence of insect or tick bites on any part of the body. Each of these may direct our inquiry in a different direction, or serve as a clue to further investigation, but prompt use should be made of every clinical facility and of every laboratory aid that may be indicated in order that early therapy may be planned on a sound scientific basis.

For those doctors who have not their own laboratory connections there are available centrally located private laboratories for general work and conveniently located public health laboratories for such examinations as may be of a public health nature. The public health laboratory should not be called on to do work of other than a public health nature, nor should it be allowed to make such examinations in competition with private laboratories. The patient who has diabetes, nephritis or cancer is not a menace to the public health, hence the public health laboratory should not examine his blood, urine or tissue.

In any laboratory examination the report is to be evaluated in the light of clinical findings, and not accepted blindly as the last word in diagnosis and the criterion of treatment. This is especially true of negative reports.

Ten, twenty or a hundred negative sputum reports do not prove that a patient has not tuberculosis, but, conversely, the finding of one definite crescent does prove that he has malaria.



If one is to profit from laboratory examinations, the laboratory must be used intelligently. Needless examinations are time consuming and expensive. Improperly prepared and preserved specimens are worthless. To the notorious Abrams a smear of dried blood on a slide was as a beacon of shining light, but to the trained laboratory technician it is only a piece of dirty glass.

Agglutination tests, whether for typhoid or for other diseases, when made from guess-work dilutions of dried blood, are essentially worthless. Accurate serial dilutions for agglutination tests can be made only if a sufficient quantity of clear serum is available.

The taking of blood cultures is commonly looked upon as a difficult task, with the consequence that an invaluable early aid to diagnosis is often neglected, especially if the patient be outside a hospital. Blood for cultures may be taken at the bedside by anyone familiar with the simplest of bacteriological technique, then sent to the laboratory for study. In many conditions, early typhoid for example, blood culture offers the quickest means of positive diagnosis. Urine and feces cultures are equally simple for the physicians, tho they cause the laboratory technician greater difficulty.

Stress has been laid on laboratory aids for the reason that in the fevers we must have such help in arriving at an exact diagnosis. A blood smear showing the malarial plasmodium confirms our clinical suspicion in a patient with chills and fever. A blood culture, or, at a later stage, positive agglutination in a sufficiently high titer, establishes the diagnosis in the typhoid group. The presence of acid-fast bacilli in the sputum of a patient with the usual history and physical findings ratifies our diagnosis of tuberculosis.

With the increasing importance of typhus fever, tularemia and undulant fever, the laboratory becomes still more valuable.

The first case of tularemia to be reported from Alabama was recorded about three years ago. Now it is a fairly common disease throughout the state. Typhus fever and undulant fever have been present, sporadically, for years, but only recently have they become alarming in their prevalence. All three of these infections have much in common from the clinical viewpoint.

The ordinary type of tularemia, the ulceroglandular type of Francis, readily arouses one's suspicion because of the extraordinary ulcers and the marked lymphatic involvement. The typhoid type, however, has only fever as an outstanding symptom, and is thought to be typhoid until negative typhoid tests and positive *Bacterium tularense* tests prove otherwise.

Typhus fever, so long thought to be transmitted only by the louse, or from person to person, is now known to have as its vector many other insects, and its epidemiologic behavior under varying conditions is still under investigation.

The causative organism of typhus fever is unknown, but clinical diagnosis is confirmed by agglutination of a member of the well known proteus group by the patient's serum in dilutions up to 1 to 80 or above, the so-called Weil-Felix reaction.

Undulant fever is assuming great importance both from an economic and a public health standpoint. First recognized at Malta, where it was proved to be transmitted through the milk of goats, it was thought to be of academic interest, only, in this country. Later it was found that contagious abortion of cattle in America was caused by a similar organism, but not until it was proved that humans in increasing numbers were contracting the disease by the use of raw milk from diseased cows did our health authorities become seriously concerned. This malady is now so common that it must be considered in every diagnostic problem arising from the presence of a continued or remittent fever.

*Brucella melitensis*, in either of its varieties, may be cultured from the blood or from the urine, but special media must be used, special technique employed and the proportion of negative cultures is greater than is the case in other members of the fever group. For this reason, agglutination tests are more helpful in the diagnosis of undulant fever than are blood cultures.

It is an interesting fact that serum from an undulant fever patient will agglutinate *Bacterium tularense* in low dilution, therefore one must be on guard against error arising from this source in making a differential diagnosis between undulant fever and tularemia.

In conclusion, it is desired to emphasize these points:

1. Typhus fever, tularemia and undulant fever must be classed with malaria, typhoid and tuberculosis as among the commoner causes of continued fever.

2. All these maladies have certain symptoms and signs in common.

3. Therapeutic efforts in these diseases should be symptomatic, only, until exact diagnosis is determined.

4. History and physical examination retain their importance in differential diagnosis, but final diagnostic conclusions are dependent on certain laboratory tests that are available to every physician, wherever located.

5. Discriminating use of these tests must be made at an early stage in fevers, in order that appropriate therapy may be instituted without delay.

### A NEGLECTED BOIL\*

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Boils have been with us since the beginning of man and probably always will be. The ordinary boil usually amounts to a very little but the person who has been unfortunate enough to have a crop of boils, extending over a long period of time, will readily inform you that there is no convenient time or place to have one. On the other hand, boils can easily be complicated with, or converted into, a fatal malady.

L. Williams, a London practitioner, in speaking of furunculosis says, "Much to the discredit of a noble profession in the eyes of the censorious public, there are several maladies, minor in degree, but irritating in kind, upon which the last word has not been said."

The real reason for this paper is a plea for more thorough physical examination and determination of the etiological factors in the production of the boil. Of course we know that a boil is the skin's effort to resist virulent staphylococci. Ordinarily the skin, being the natural habitat of staphylococci, has the power of resisting them, but when the resistance of the skin is lowered, quiescent staphylococci will begin their in-

vasion and the damage is done. The lowering of the skin resistance can be caused either by traumatic factors, or any debilitating disease, by disturbance of metabolism, focal infections, especially infected teeth and tonsils, prostatitis and sinusitis, and certain unwise diets. Every one should connect diabetes and furunculosis and should remember that a normal urine does not necessarily exclude diabetes.

Most of the cases of furunculosis show up in a surgeon's office, and the average surgeon will lance them, and let things go at that. In all fairness to the patient, he should be given a complete physical examination and surgeons should advise the patient and refer him to a good internist, if possible.

The old idea that a general run down condition predisposes to boils is erroneous, for most boils occur in rather plethoric stout individuals. For instance, there is more literature on furunculosis in German magazines than in the rest of the countries combined. In our southland, the general run down child with boils has a definite reason for being run down and it is up to us to find the cause and correct it. In my experience, it has been easily found either in tonsils, examination of feces for hookworm or incorrect diet.

There are boils and boils, most of them harmless as I have said, but a furuncle around the face, especially near the midline of the upper lip, should always be regarded as dangerous and treated accordingly. They are prone to be complicated by a severe thrombo-phlebitis, which because of arrangement of facial veins, has ready access to the cavernous sinus and brain. These cases, in my opinion, should be treated by absolute rest in bed, thorough elimination, local application to increase hyperemia and prevent spread, whether it be by use of x-ray, heat and poultices, circuminjection of blood or other conservative plans. General treatment to increase patient's resistance, such as injection of non-specific proteids, should be tried and in cases of associated septicaemia intravenous injection of a large dose of 1% mercurochrome, usually as much as 20cc., has proven a great help to me. The main reason I mention furuncles of the face is to bring out and emphasize the fact that the several pa-

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tients whom I have seen die gave a definite history of trauma, such as squeezing a black head or pimple, or early surgery. In my opinion, a furuncle or carbuncle of the face should never be lanced, unless there is a definite fluctuation and localization with free pus.

A second class of non-surgical staphylococcal infections are those associated with diabetes. In my opinion, conservative methods with especial attention to treatment of the diabetes have prevented many fatalities.

We all know that boils can be complicated with meningitis, or with septicaemia, or with multiple abscesses in most any of the vital organs, and while I have seen most of these complications, it has been my observation that most of the serious complications from furuncles have been in the genito-urinary tract. I have under treatment now two cases of chronic staphylococcus prostatitis which have also been under the care of Dr. Hugh Young of Baltimore, treated with mercurochrome, vaccines, irrigations, x-rays and general treatment. They still have their prostatitis and probably always will.

Another fairly common complication is the terrible carbuncle of the kidneys, curable only by surgery, and often hard to diagnose. A persistent fever, with pain in lumbar region, a high leukocytosis, a history of furunculosis, and practically negative cystoscopic findings should lead one to a proper diagnosis.

About a year ago, Dr. Fred Wilkerson, Montgomery, Alabama, referred just such a case to me, and we made a diagnosis of carbuncle of the kidney. The operative findings, however, pointed more to a perinephritic abscess. This was drained, the culture showing a pure strain of *Staphylococcus aureus*. Much to my surprise, the patient continued to have temperature and leukocytosis. After watchful waiting for a week, a second operation was done. In an effort to express the kidney a large spongy mass was felt on the upper and posterior aspect of the kidney, which mass was easily removed. The mass was about the size of an orange, having the appearance of a dirty snow ball. After removal of this mass, the bleeding was so profuse that the kidney had to be expressed. The exposed kidney

showed it to be slightly enlarged and congested, oozing profusely from a raw posterior surface. After the second operation the patient made an uneventful recovery. The interesting part of the story comes from the pathological laboratory. The section showed a definite carbuncle of the adrenal gland, a mass of adrenal tissue infiltrated with polymorphonuclear leucocytes. I have searched the literature for evidence of an acute infection in a suprarenal gland without avail, and mention this case only as another possibility in the etiological aspect of perinephritic abscesses.

A carbuncle and a furuncle differ only in the amount of tissue involved, but the treatment is entirely different. A carbuncle, with the exception of those of the face, should always be excised under a general anaesthetic, which gives immediate relief and cessation of the disease, if properly done. The only objection I see to this method is the long period of convalescence and the residual scar. The scar can be prevented to a large extent by skin grafting at proper time.

In 1929 Frederick Christopher of Chicago exhausted the literature in his article on "The Treatment of Furuncles and Carbuncles." He divides the treatment into three general heads: prophylactic treatment, which consists of strict body cleanliness; prevention of trauma to skin, such as that caused by the wearing of a rough collar; and if traumatized, early treatment with iodine or other antiseptics. Other forms of preventive treatment should include correction of diet, the use of x-ray, and vaccines. The actual treatment he includes under two heads, first the local and second, the general treatment. When one considers the various and sundry methods of treatment, he is thoroughly convinced that the treatment is far from being standardized. Opinion is still divided as to the wisdom of incising furuncles, the main objections being that incision is associated with pain, the possibility of opening new channels of infection, the slow healing, the use of anaesthetics and the disfiguring scars.

Junkerman and Levin even go so far as to say that it is criminal to incise boils except in cases of definite fluctuation. I believe in incision, but also believe that in-

cisions at improper times have placed surgery in disrepute. If seen early, which is rarely the case, an effort should be made to abort the disease by treatment with x-ray, antiseptics, or otherwise. If the disease has definitely passed the abortive stage, conservative methods to facilitate localization and softening should be instituted. I have obtained most satisfactory and quick results from poulticing with ergophene ointment and heat. Usually in twenty-four hours one can find a soft fluctuating area in the boil, which can be incised under ethyl chloride anaesthesia. A very small incision with a pin pointed bistoury will do more good than a wide or crucial incision. The incision will relieve pain and tension, and continuation of the poultice will soon separate the core. After separation of the core, a little balsam of Peru and castor oil poured into the crater will hasten healing. Levin, who so strongly condemns surgery, advises opening the epithelium over the boil with salicylic acid plaster. That, to my mind, is incision and I should think the bistoury would leave a more pleasing scar.

The other methods of local treatment are so numerous and varied that it would be tiring to discuss them all. The x-ray men claim wonderful results from irradiation, but I have incised numerous furuncles that have been previously irradiated. I do believe, however, that x-ray promotes localization and lessens the pain, either of which would make it a valuable adjunct in treatment. Ultraviolet rays have proven beneficial in furunculosis of infants, while furunculosis seems to have escaped the cure-all effects of diathermy.

Another relatively new method of local treatment, first advocated by Laewen in 1923, consists of injection of a quantity of the patient's blood around the infected area. Other men, following Laewen's idea, have tried circuminjections of horse serum, Ringer's solution, acacia, silver salts, and report good results. I have tried circuminjection of blood, but apart from diabetic infections, I have found no especial benefit from it.

Von Wassermann and Hoffman advocate the use of "Histoplat," a preparation containing an extract of live staphylococci, while others claim beneficial results from using vaccines locally. After reading their

articles, I really believe that time had as much to do with localization and softening of the furuncles, as did their treatment.

This brings us to systematic treatment. Vaccines, either stock or autogenous, are certainly justifiable in chronic furunculosis, and in many instances cure, but by no means in all cases. This class of treatment should include the bacteriophage treatment of Newton W. Larkum of Michigan, of which more is to be written later.

The role of insulin in diabetic cases is well known and recognized, while the question of non-specific proteid therapy has already been mentioned and advocated. Numerous other drugs will help in certain cases. Sulphur baths have been used for years, in Germany especially. About five years ago, I thought I had found a panacea in treatment with tin preparations, the best of which is stannoxyl, but after a few dismal failures I am floundering again. Manganese, mercury, quinine, mercurochrome have also been tried, but only as a stab in the dark.

Dietetic measures in certain cases have proven absolutely necessary to a cure and, personally, I have found yeast most valuable in constipated individuals with intestinal putrefaction and other metabolic disturbances, usually administered in pill form, such as pills of iron and yeast.

After all is said and done, I wish to again emphasize the fact that a furuncle is nearly always a sign of underlying trouble and, if that trouble is located, our problem is easily solved.

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21. Alderson, H. E. Bacteriophage (staphylococcic) in pyogenic infections of skin. *Arch. Dermat. & Syph.*, 1930, xxi, 197-205.

From recent experiences with a small number of carefully selected and observed cases of acne vulgaris (pustular type) and furunculosis, it is felt that good results may be expected from this form of therapy. Until several hundred such cases are studied, however, the question of variations in results reported by others and that of artificial immunity will remain unsettled.

## DISCUSSION

*Dr. A. C. Jackson, Jasper:* We are arriving at a solution to some of our evils when we admit that we neglect things. Dr. Blue has spoken of neglect in the treatment of simple boils. We have heard discussions of neglected appendicitis and neglected ulcer of the stomach; now we come to the question of neglected boils, and, as one doctor put it last year in Louisville, we have to have a personal experience to appreciate these things. I have had a personal experience with the things Dr. Blue told us about.

About the time I graduated in medicine, there came a crop of boils on the back of my neck. I, of course, looked for a good doctor, because I didn't think I was much of a doctor for that. I had sev-

eral sleepless nights waiting for the boils to soften. Turning to treatment recommended by my teacher, Dr. Dye, of New Orleans, I found that he had a very good remedy. Before I close, I am going to give you a couple prescriptions he gave me, and which I have used with some degree of success.

I think Dr. Blue brought out a very fine point when he urged us to look for the underlying cause of furuncles.

Another fine point was his reference to diabetes. I have just had this brought to my mind by a case referred to me by a very fine young doctor. This patient had an infection in the foot. The doctor had incised it but relief did not follow. I learned that the same thing occurred in the thumb about a year ago. I am not censuring this young doctor because he is very fine, but he hadn't examined the urine. I found a high percentage of sugar. There was the underlying cause—a diabetic condition.

Dr. Blue emphasized the fact that you should not open boils on the face. That is one thing I want to impress if I can. You must leave them alone, especially if they are about the lips. Put the patient to rest in bed, use hot packs, light therapy and everything else, but don't cut them. I use a knife pretty freely sometimes, but I won't cut a boil about the lips at all, and not about the face if I can help it. Another thing worth while is an investigation of infection in the genito-urinary tract as an underlying cause.

I agree with Dr. Blue that carbuncles should be excised freely. I believe in the old expression of taking the hub out of the center and making wagon spokes around it, and then slipping out under those spokes so the pus can drain into the central crater.

In regard to the treatment, I think Dr. Blue has covered the subject very fully. For a local application, I haven't found anything better than a thirty per cent ephidol application to soften them up. It seems to do some good. Then, of course, when they are ready, they should be incised.

*Dr. S. R. Benedict, Birmingham:* Frequently carbuncles are opened on the face. This is just as serious as opening a boil, if not more so. I do not even open the boils. I let them go ahead and open themselves. It is a dangerous proposition.

Opening pimples in the nose is another serious matter. A number of cases have been reported where pulling hairs out of the nose has resulted in infection and meningitis and death. The case of carbuncles is just as serious as boils, and the little pimples in the nose are the most serious of all because there you have a direct channel into the brain.

*Dr. W. W. Harper, Selma:* We ought not to squeeze boils.

D'Herelle of Yale, who made an investigation in Egypt and India, has discovered a bacteriophage for boils and carbuncles. He is now conducting this work at Yale, and under his direction the Michigan State Board of Health is making a *Staphylococcus aureus* bacteriophage. It can be

(Continued on page 61)

## WHAT THE YOUNG DOCTOR SHOULD KNOW

W. M. CUNNINGHAM, M. D.,  
Corona, Alabama

The young doctor of to-day. The young doctor of yester-year. Forty years have wrought many wonderful changes.

The young doctor of forty years ago, after a high school course or maybe occasionally a college course, entered immediately upon his medical studies in a college where the curriculum was completed in two years.

The young doctor of that day was then granted a diploma graduating him in the medical sciences, was allowed an examination by the State Board of Medical Examiners and, if his proficiency warranted, was licensed to practice medicine. His license gave him authority to practice all branches of the healing art.

To say that he was as competent to administer medical services to a waiting public as is the young doctor of today would seem absurd, yet, when we consider what the advancement of medical science has added to what was then known, we may allow that he was as competent in the knowledge of his day as is the full-fledged doctor of the present day.

Surgery then consisted chiefly of amputations, excisions, ligations, the treatment of fractures and operations for hernias and the like. In my two years at Vanderbilt I did not see a laparotomy. The operation

was being done only by the pioneers in this new field of surgery. At that time, therefore, there was not a huge mass of medical lore to be covered.

Before I find fault with the young doctor of to-day, I want to make a plea for him.

As you know, he is required to spend the best part of his young life—that part of life when youth's ambition to serve and put things over is at its peak—in making the

necessary preparation for a future medical career. Nor am I finding fault with the present day requirements for graduation or I would dispense with the State Board of Examiners, since the high standard of qualification required by our medical colleges might warrant a license without further examination.

There is another aspect, however. When a man has spent these years of arduous study, has expended all his resources, plus all he could borrow, and has been pronounced a legally licensed doctor, it seems rather unjust to let custom force him to a further pursuit of knowledge before he can begin to

serve. I refer to the custom which requires him to devote one or two years more in internships, plus another one or two years in postgraduate study. For the man who wishes to specialize in surgery, or some other specialty, this is well, and yet I maintain that no matter what special branch of medical science one wishes to engage in, a few years in general practice will be found a great asset to a successful future.

Argument is offered that intern service affords a method of putting knowledge into

### THE OATH OF HIPPOCRATES

"I swear by Apollo, the physician, and Æsculapius, and Hygiea, and Panacea, and all the gods and goddesses, that, according to my ability and judgment, I will keep this oath and its stipulation—to reckon him who taught this art equally dear to me as my parents, to share my substance with him, and relieve his necessities if required; to look upon his offspring in the same footing as my brothers, and to teach them this art, if they shall wish to learn it, without fee or stipulation; and that by precept, lecture, and every other mode of instruction, I will impart a knowledge of the Art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but none others. I will follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to any one if asked, nor suggest any such counsel; and in like manner I will not give to a woman a pessary to produce abortion. With purity and with holiness I will pass my life and practice my art. I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses I enter, I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption; and, further, from the seduction of females or males, of freemen and slaves. Whatever, in connection with my professional practice or not, in connection with it, I see or hear, in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret. While I continue to keep this oath unviolated, may it be granted to me to enjoy life and the practice of the art, respected by all men, in all times! But should I trespass and violate this oath, may the reverse be my lot!"

\*Read before the Association in annual session, Birmingham, April 23, 1931.



practice. It does in a way but with such restrictions as to curb initiative. If a young physician has ambition to do general practice, the ordinary run of cases in the average hospital where internship is available will be 60 to 75 per cent surgical. The service, therefore, amounts to but little more than a continuation of medical studies—all well enough, but why prolong the young physician's course of study indefinitely? The sooner he assumes complete autonomy, the sooner he will build a medical career.

If there could be a revamping of the intern service given the present day intern so that he could get essentially the kind of practice he would meet when he leaves the hospital, much good would be accomplished. These custom-imposed internships may be likened to the rather waning custom of chaperons for fully grown young ladies. Formerly they were not to be seen anywhere in public without a chaperon. Custom has somewhat changed in this respect. Why chaperon the young doctor till he is old? A teacher may tell you how to swim—may show you how to swim, but he cannot swim for you. You will never swim till you are turned loose; then you will swim for yourself.

A man will avail himself of all the internships and postgraduate courses offered but when he enters a practice of his own the problems he meets are different and yet as perplexing as they would have been before. Indeed, after continued studies in postgraduate work, where the master surgeon's skill is seen; where every technique is made perfect; and surgical procedures are carried out which he knows he could not follow under a regime of the very best, his morale is apt to give way. He may even decide to do nothing. Have you not observed instances like this?

One very important phase of a young doctor's career is his reaction toward the Code of Ethics of the American Medical Association. No matter how intensely the college professor has emphasized the importance of observance of the tenets of the Code, he cannot possibly appreciate the principles outlined until he has entered into his own field of work and begins to put them into operation.

Let's place the young doctor of to-day in charge of a practice of his own. He has received his diploma. He has passed the State

Board of Examiners. He has had his internship if you like. He is chuck full of medical knowledge. He feels proud of himself. Like the father of a first-born, who thinks no one else ever had such a baby, he thinks he knows it all. If he could be bought for what he is actually worth and then sold for what he thinks he is worth, the salesman would have a "rake-off".

Figuratively speaking, he is fully equipped with both front and rear bumpers, latest type shock absorbers and high test gas; ready to go and anxious to bump into something. With a burning need for funds to meet past due obligations, he justly feels it is time for him to realize something as a reward for the outlay of time, money and arduous study of the past six years.

The waiting is all too long but finally he receives a call. It is an obstetrical case—a primipara, if you please. The family doctor happens to be out. With due preparation he sets out to give the case the very best. All progresses well for a time but the slow tedious progress leads him to make a more painstaking examination when he decides he has an occipito-posterior.

Time passes. The family gets nervous. The old doctor has returned and, when it is suggested that he be sent for, the young doctor readily assents. This is as it should be. The old doctor arrives and, with the exchange of usual courtesies, sits down on the edge of the bed and, presto, the new arrival is at hand. The nice old doctor, the good old doctor, the ethical old doctor explains that the head rotated to normal position and would have done so without him, but no argument could ever be made to convince the family that the baby would ever have been born, if he had not arrived. Nor can it be written in the annals of medical history whether or not that was really a case of occipito-posterior position. Here, his shock absorber is put to the test. He feels also that his rear bumper is well placed.

However, the old ethical senior gracefully retires and with proper explanation to the satisfaction of the family allows the young man to complete his ministrations to the young mother, at least for the time-being or till her recovery.

Ere long he finds himself in charge of a patient with a more or less protracted illness. He is getting along fine. He is sure

he is rendering a valuable service. He has studied every phase of the malady and is using the most approved methods. He would like to show his skill and ability by getting this man well. His patient is progressing nicely. Without warning by the family, another doctor appears on the scene. Said doctor is known in the community as one who strives to keep himself in the lime-light. He had made a social call the day before and the young doctor's treatment had been suspended. He meets the young doctor, however, in order to be "ethical" as he explains. He affirms that it is his purpose always to be ethical. He formerly belonged to the county medical society but did not like the way they ran things and quit. He explained to the young doctor how he regretted to take the case but the family insisted so strongly that he just had to.

The young doctor merely backs off, keeping his front bumper in range, and feeling a strong impulse to try its strength on the whole bunch.

What is going to be the young doctor's reaction? Will he be philosophic, resolute, broad-minded, and will he gird himself and resolve to stick to the old ship? Will he in this trying moment resolve to hold on to the Code of Ethics and let others do as they may? Too often, however, his first impulse is: "To the four winds" with your medical ethics; there is no such thing as medical ethics anyway.

Unfortunately, we have a few "black-sheep" in the flock, who will stoop, for the sake of a few paltry dollars and a little cheap notoriety, to "butt in" as in the above picture. Should a young doctor poison his fountain of youth by engaging in mud-slinging with a character who would stoop so low? Does it not lower him who does?

Is there a doctor of fame in the medical fraternity in all our beloved country who does not hold to the tenets of the Code of Ethics of the American Medical Association? Whether the way seems easy or hard, the young doctor should pause long enough to consider that a medical career built on any other foundation will crumble.

Ready financial gain, ill-gotten gain, gain which is gotten by slighting the ethics of the profession has no value in comparison with that which comes from honest endeavor; from giving a service born of a stoic will to do unto others as you would they

should do unto you. No doctor has ever climbed to fame or fortune as a doctor of medicine in any other way.

My dear young doctor! Please take notice!

The old and obsolete custom of a preceptor for the young doctor was a good thing in its day. A young man, fortunate enough to be able to associate himself with an older man in the profession, is at a very great advantage. A compromise measure, wherein the young man could substitute this training for that of his internship, would no doubt result in a better training in the actual service he is to be fitted for and put him further on his way financially. However, custom rather forbids.

One thing the young doctor should know, and will soon find out, is that the old doctor who has kept himself abreast with the advancement of medical science knows as much more than the young man as the old man's years in medicine exceed those of the young man.

It is well known that for the past several years there has been a growing tendency toward specialization in the different branches of medicine. There is no fault to be found in this, because we all know that the trained specialist can render a far better service, where his services are really required than those not so trained. But this fact being known by the laity has made it more and more popular to refer a great bulk of the out-of-town cases to specialists, which cases could be handled just as well by the local attending physician; provided, the local man would properly equip himself with knowledge and material equipment to do as nearly a whole service as he could and should do. This is not the fault of the specialist.

Here is an open and fertile field for the young doctor of to-day who has initiative and ambition and will equip himself to do as complete a medical service as he can. Why should not the doctor of the small town make his blood and stomach analyses, examine most of his laboratory specimens, handle the x-ray, treat fractures, at least the ambulatory cases, care for heart cases—in short engage in a much wider range of medical service than appears to be the custom now?

By this arrangement the much-talked-of high cost of medical practice could be low-



ered. Fees for service could not be materially lowered but the cost of traveling long distances, privations and loss of time could be minimized.

Since the old time doctor of by-gone days is no more with us and specialization has grown to such proportions, there is need for a retrograde movement of the general practitioner, and especially the young doctor, toward the county and the small town. There should be an equalizing of competent medical service in the country and small town as compared with that in the big city.

Inasmuch as the public utilities are furnishing their products to the country districts as well as to cities, the facilities for installing any and all of the equipment necessary for an up-to-date medical service in the small town is in every way as good as that in the city.

There is an urgent call, by reason of the conditions that exist, for the young doctor to establish himself in the country and the small town. Who will start the exodus?

It is pointed out that the income of the general practitioner is the smallest of all as compared with those doing a special line of work. Statistics put the average income of the general practitioner at between \$4,000 and \$5,000 per annum. This is not surprising but it is not as it should be because no man in the profession works harder or deserves adequate pay more. The reason of this lessened income of the general practitioner is because he has allowed his work to be drawn from him; he has even made himself a party to the drain on his clientele and lessened his own income by joining in the popular craze to send everything to the specialist.

A large part of his clientele, having learned this popular idea, seek the specialist of their own accord. Oftentimes they get into the hands of irregulars and really defeat that whole souled co-operation which should exist between the specialist and the general practitioner. The specialist is in no wise to blame for this condition.

In order for the whole matter to be re-adjusted, much effort will be required on the part of the general practitioner. He should recoup what really belongs to him by devoting himself to his own task and by keeping himself equipped, both by knowledge of modern methods of treatment and by having

his armamentarium so up-to-date that he can render as efficient service as is rendered elsewhere.

## DISCUSSION

*Dr. E. P. Lacey, Bessemer:* I have enjoyed Doctor Cunningham's paper. It was very interesting indeed and on a subject I have never before heard discussed in a medical meeting.

I sometimes think we are rather indifferent to the young members of the profession. I sometimes think there is not that cordial relationship existing between us there should be. Most doctors, so far as my experience goes, are poor, and unfortunately most of us remain poor. The same amount of study, the same amount of energy, the same amount of money expended in almost any other calling or profession will bring greater rewards than those that come to the average practitioner. Sometimes I have seen old doctors who had very little patience with the younger members of the profession. If one entered the community they seemed to take it as a personal offense, and immediately proceeded to try to horn him off the range. That is all wrong and I am glad to say such a spirit is not as prevalent as it was at one time.

So far as the things the young doctor should learn are concerned, there are a great many things he ought to know and will have to know, if he hopes to succeed. Not all are found in text books. One of these is that he must not be too sensitive, and certainly not too sensitive to criticism for no man has ever lived on this earth who has escaped. Another is, he should not feel offended or consider it a reflection on himself if the patient or the patient's friends suggest consultation. They want to feel that everything has been done that could be possibly done for their loved ones, and I have great faith in the efficacy of consultation. I have been surprised many times myself at the things I have overlooked that a consultant has called to my attention that were worth a great deal to the patient. I feel that so far as the comparison between the young doctor of the present day and the doctor of forty years ago is concerned, from a standpoint of knowledge there really is no comparison. The young doctors of the present day have so many advantages and opportunities that doctors of forty and forty-eight years ago did not have, I am often surprised at the splendid doctors they made.

When I graduated, if you will pardon a personal expression, forty-eight years ago we were groping along the border line of bacteriology. Without bacteriology there can be no sanitary science; without sanitary science there can be no preventive medicine, and so the things the present day doctors have the advantage of are of untold benefit to them and to the communities in which they practice. We knew nothing of septic surgery; we knew nothing of the Widal test for typhoid fever; we knew nothing of the Wassermann; we knew nothing of a great many things, and all these things that have come to the young doctor during the passing years have been of untold benefit to him.

I do not censure myself, I do not censure the men that taught us medicine for not making these ad-

vances. Medicine is an evolutionary process and when I say that I do not mean monkey evolution, but I mean the science of evolution, which is a progressive force. I feel that under the old regime some wonderful physicians were made who added luster to medicine, but I do think that the young doctor of the present day has advantages, the worth of which to him he does not realize.

So far as ethics are concerned, so far as my association with young doctors has permitted obser-

vation, I have found them ethical; I have found in most of them a desire to learn; most of them do accept the suggestions of their seniors, and all this is tending to give us better physicians. This is well, for the young doctors of the present day will soon have to assume the burdens that have been carried by older physicians. I am sure that these burdens will be placed in hands that are capable, and that the cause of medicine will be carried forward and make the same progress in the future that has been made in the past.

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(A NEGLECTED BOIL: Continued from page 56)

gotten on the market at a nominal cost. It is put up in one, two and five cc. capsules.

A young woman came to me in the early part of the fall with a series of boils. She had used everything and finally recovered in spite of the doctor. About two weeks ago she returned with a boil in her nose. I had just received some of this bacteriophage and gave her one cc. She came back in twenty-four hours for a second dose. I could see immediately that the boil was much better. She said, "I am wonderfully improved." I gave her a second dose and when she came back after a few days she said, "My boils are gone." Everything had cleared up.

I believe that in this product put out by the Michigan State Board of Health we have something that will cure our boils and carbuncles. Of course, we must remove the underlying causes.

*Dr. R. S. Hill, Montgomery:* I think Dr. Benedict is correct in his emphasis of the danger of boils in the nose, but I do not feel that we can have rules as fixed and as unchangeable with ref-

erence to opening boils, as the laws of the Medes and Persians. I am decidedly of the opinion that there are stages of a boil in which it should be opened. When pus has formed, a small opening to let that pus out, in my opinion, will prove beneficial, and before that stage is reached, a simple application of a poultice, it seems to me, is indicated.

Now, if you have an infection that starts off with a violent pain, as I personally have had recently more than once on my own body, a few drops of carbolic acid injected in the center of the infection, will destroy it. Further, you will relieve the pain and your patient will feel very grateful. However, for about ten seconds after you inject, he will have the tortures of the damned. After that the pain and soreness is entirely removed as was true on my arm a couple of weeks ago; as was true on my side a few days ago.

*Dr. Blue (closing):* I agree with Dr. Hill about the carbolic acid. It will relieve pain. However, the initial discomfort caused by the injection has caused me to abandon the use of the drug for boils.

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The prevention of colds by the principles of isolation offers today one of the most intelligent and logical methods of the control of this disease and its complications. The recent experimental studies on the etiology of the common cold give evidence to the belief that we are dealing with a contagious disease. Human beings and apes in contact with people with colds, contracted the disease. Those isolated generally have remained well. The instance of respiratory diseases in premature infants living in specially constructed wards has apparently lowered the mortality about 50 per cent. It is thought that isolation has contributed greatly. Clinical experience suggests further that infants and children in small families living in spacious surroundings show a lowered incidence of colds and upper respiratory infections. The difficulty of isolation in private practice is recognized, but its importance cannot be overestimated, especially among young children, as the best method of controlling the common cold and its sequelae. (Sisson: *N. E. Jour. Med.*, July 23, 1931.)

A modern and effective system of criminal justice, procedure, and treatment can be worked out through careful study and consultation between thinkers in the field of medicine and mental hygiene and members of the legal profession. But the task does not end there. Judges and lawyers alone cannot change the law. They are bound by the shackles of the existing common and statutory law. Lawyers and physicians after working out a program, agreeing and uniting upon it, must then go to the people and to the legislature to get the laws changed. Then, and only then, will the archaic rules of laws based upon medical facts of scores of years ago be discarded and replaced by laws embodying the sound knowledge and thought of today. (*Penn. Med. Jour.*, July 1931.)

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### LEPROSY

There are at present from 600 to 800 leprosy patients in the United States and approximately three million lepers in the world, says Hygeia. Most of the lepers in this country are confined to the leprosum at Carville, La. A recent report shows that only one of thirty-one who were discharged as cured had a relapse. (*Texas State Jour. Med.*, 7:31.)



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## THE COURSE OF BRIGHT'S DISEASE.

It has been difficult always in Bright's disease to predict at the bedside the nature of the kidney changes which will be found at autopsy. Thanks, however, to the painstaking work of Volhard and Fahr and of Addis,\* who were able satisfactorily to relate clinical observations to autopsy findings, we now have a much clearer insight into this problem and are in possession of a good working classification. More recently the studies of Van Slyke and his associates† upon a large group of cases at the Rockefeller Institute for Medical Research have served not only to facilitate the grouping of patients with Bright's disease, but also to shed new light upon the course of the disease. These workers conclude that it is definitely possible from observation during the course of nephritis to deduce the general nature of the pathological changes occurring in the kidneys. They adopt the classification of the first mentioned authors: (1) Glomerulo-nephritis, or hemorrhagic nephritis, (2) Nephrosclerosis or arterio-sclerotic nephritis, and (3) Degenerative Bright's disease, or nephrosis. The first of these is characterized anatomically by inflammatory glomerular destruction, and clinically by hematuria, acute, intermittent or chronic, usually with hypertension and nitrogen re-

tention. The second is characterized anatomically by thickening of the small renal arteries and clinically by marked hypertension which precedes all serious renal signs. The third is characterized anatomically by degeneration of the renal tubules and clinically by edema with marked albuminuria without hematuria or hypertension. All nephritis, according to these authors, can be placed in one or the other of these groups.

The clinical study of Bright's disease has been promoted and accuracy of prognosis made easier by the recent introduction of two trustworthy methods of precision: the "Urea Clearance Test" of Van Slyke\*\* and the method of Addis for counting the formed elements of the urine. The urea clearance test requires merely urea determinations on one blood sample and on two urine samples passed during successive periods of approximately one hour each. From this is deduced a figure which expresses the cubic centimeters of blood per minute cleared of urea by renal excretion, the "blood urea clearance." It is the best means at our disposal for measuring the functional capacity of the kidney. The method of Addis calls for a count of the casts, red cells, and white cells in the sediment obtained from the urine passed during the last 12 hours of a 24-hour dry diet. It tells of the intensity of the pathological changes taking place in the kidney. In addition, it has been found that valuable information may be obtained from a determination of the proteins of the plasma, for deficiency of plasma proteins, such as accompanies large albumen losses through the kidney, is largely responsible for the edema and perhaps other manifestations of Bright's disease. Van Slyke and associates found that the tendency to non-cardiac edema runs approximately parallel to the fall in albumen content of the blood plasma, except in the early stages of acute hemorrhagic nephritis; in all stages of nephrosis (the degenerative group) plasma albumen deficit and edema tend to occur together.

From their studies of the course of Bright's disease these clinicians report: "In acute hemorrhagic nephritis the prognosis was found to be independent of the plasma albumen content. The majority of cases in which this fell to a low level became

\*Addis, T.: A Clinical Classification of Bright's Disease. *J. Am. Med. Asso.*, 1925, 85, 163.

The Renal Lesion in Bright's Disease. Harvey Lectures, 1927-28. *Am. J. Med. Sc.* 1928, 176, 617. Hoeber, N. Y. 1931.

†Van Slyke, D. D. and associates: Observations on the Courses of Different Types of Bright's Disease. *Medicine*, 1930, 9, 257.

chronic. Intensity of hematuria, proteinuria, and degree of hypertension had no apparent relation to the probability of recovery . . . Of the different features of the disease that were followed, the blood urea clearance proved to be the most closely related to the onset of final renal failure. The renal function, measured by the clearance, could apparently remain indefinitely at 10 per cent of normal without uremia, but when it fell to below 5 per cent uremia occurred and was usually fatal."

Studies such as these, and the methods of clinical investigations thus developed, promise a better understanding of the course of Bright's disease. They have already pointed the way to better treatment.\*\*

J.S. McL.

### FUNCTIONAL DISORDERS

Perhaps the greatest defect in medical education today is the lack of training given the student in the various functional disorders. In his undergraduate years he is taught complicated laboratory procedures, bio-chemistry, serology, etc., and is given a thorough training in actual organic disease, both in the clinic and at the bedside. During his internship he sees practically no cases other than those with definite organic lesions; practically all hospital cases have demonstrable pathology since there is no room for sufferers from the various so-called disturbances of function. As a result, when the young physician commences private practice he is compelled to treat a type of case with which he is entirely unfamiliar, the nervous person, whose symptoms may be mild or severe, but whose ailment is of vague nature and accompanied by no demonstrable gross changes. Many of these people are the "chronics" who constitute such a large proportion of office practice. The handling of this type of case is an art and soon the young doctor finds that, although he may be well trained scientifically, he knows

little of the art of medicine and of human nature. Several years of trial and tribulation are usually necessary before he is able to cope successfully with this part of his work. Inasmuch as fully sixty per cent of office practice is composed of these functional cases, it is at once apparent how necessary some knowledge of them is.

Disturbance of function manifests itself in the gastro-intestinal tract perhaps more often than in any other part of the body, a fact that has been alluded to and discussed by many writers. Recently, however, Alvarez<sup>1</sup> in a delightful volume has emphasized the subject again and has pointed out the fact that we are prone to pay too little attention to the nervous and emotional side of the patient in our consideration of a given case.

Heredity, environment, training and emotion all play a part in the make-up of any individual and no study of a case can be considered complete without some knowledge of these factors. Organic disease should always be looked for, even in the most intense neurotic, and the diagnosis of a functional disorder should not be made until the other possibilities can be definitely excluded. As Alvarez points out, worry, strain, overwork, disappointment, domestic unhappiness, constitutional inadequacy and many other things may upset the digestion to such an extent that an organic disease is suspected.

More careful study of our digestive cases would reveal the functional nature of a large number of them, would save many useless operations and would enable us to be more successful in our therapy. Numbers of these poor sufferers have had repeated laparotomies, all without benefit; others drift from doctor to doctor without receiving due consideration, and finally end in the hands of the various cultists and become bitter and vindictive foes of the medical profession.

More thorough examinations and better understanding of the emotional lives of these people, then tact and kindness in handling them would enable a large percentage of them to take their proper places in society and would rebound to the credit of the profession. Both internists and sur-

\*\*Van Slyke, D. D., and associates: Studies of Urea Excretion. Comparison of Blood Urea Clearance With Other Methods of Renal Deficit in Bright's Disease. *J. Clin. Invest.* 1930, 8, 357.

McCann, W. S.: The Many-Sided Question of Protein in Nephritis. Read at the Clinical Session of the American College of Physicians, Baltimore. March 24, 1931.

1. Nervous Indigestion: Walter C. Alvarez. Paul B. Hoeber, Inc., New York.



geons alike should profit by Alvarez' teaching and pay more attention to these functional disorders than is done at the present time.

F. W. W.

## OUR LEGISLATURE IN RETROSPECT

Another Legislature has come and gone.

Viewed in the whole, and solely from the standpoint of organized medicine and of the State Board of Health, probably no preceding legislature in our history has manifested more plainly a spirit of satisfaction and of confidence in those to whom had been entrusted the health and welfare of its people than has this one. Almost without exception, all matters, even remotely bearing upon health, have been brought to the health department with but the single thought of strengthening and increasing the scope of usefulness of this important arm of the State's government.

Even though faced by the seemingly urgent necessity of retrenchment and rigid economy, in the absence of adequate sources of revenue to meet the growing demands of ever-widening state activities, the feeling was well-nigh universal that the State could ill afford to curtail or cripple its health department. The Investigating Committee of the State's finances, when shown the amount allotted to health work—one and one-half per cent of the total expenditures of the State—how this was spent and the benefits accruing from the various activities conducted by the Health Department, seemed fully convinced that retrenchment here would be but short-sighted policy.

This fact, however, must be borne in mind: While no action has been taken to curtail appropriations to the health department, there was displayed a manifest unwillingness to provide legislation whereby adequate revenues would flow into the State's coffers to take care of the needed expansion and increased demands made upon practically all departments. Consequently the health department, in common with other departments, will likely be forced to bear its prorata share in the difference between the intake and the output; what this may prove to be cannot be estimated.

This feeling of confidence was further shown by the fact that our tuberculosis bill—one of the few bills carrying an appropri-

ation, which received favourable consideration—glided smoothly on to final passage and approval by the Governor. This was easily the most outstanding piece of constructive legislation accomplished by the health department and should immediately serve as a stimulus to many counties to go seriously to work on their own tuberculosis problems. In a later issue of the Journal a synopsis of this bill, embracing its salient features will be given, so that the doctors of the State may intelligently co-operate with and advise their people as to the importance and merits of its provisions.

In the handling of several bills introduced by different groups, seeking to gain special concessions for themselves as regards our present Medical Practice Act, this Legislature gave small concern to such importunings and seemed quite content to preserve the high standards of medical qualifications now prevailing in Alabama; which standards are the fruit of the labours of organized medicine for more than a half century.

A bill seeking to require county health officers to do the jail and almshouse practice in their respective counties, failed in its passage. The State Health Department's views, while quite fixed as regards health officers engaging in work of an individualistic or curative nature, have, to an extent, been compromised in certain of the smaller counties, in the effort to get health units started; but only after approval of such procedure had been given by the organized profession of such county. Proper provision is made by law, whereby boards of revenue may employ physicians to do this type of practice, so that the county health officer can devote his undivided time to purely public health work as is now demanded of him by the existing statutes.

The health department has given aid in the passage, the amending, or strengthening of numerous other bills looking to the improvement of a better and more co-operated health service; such as the amendment to the training schools for nurses; the remodelled pharmaceutical bill; the Workmen's Compensation Act, increasing the amount allotted for surgeons, and hospital fees from \$100 to \$150 (a compromise from \$250 as originally sought); an improved embalming bill; an improved cor-

oner's bill for Montgomery County, and others.

Almost as important as the passage of legislation of a constructive type, at least to the health department, is the careful watching of all avenues for possible legislation which might be prejudicial to the health interests of the State.

Viewed in these particulars, it is felt that the interests of both organized medicine and public health work have fared happily and that our appreciation and thanks should be extended the members of this Legislature, now passed into history.

J. N. B.

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### DIVISIONAL MEETINGS

In the Journal for July appeared an important reference to a change in the number of meetings to be held by the divisions of the Association. It will be recalled that in 1925 an ordinance was adopted providing that four meetings should be held in each division during the year. By action of the Association at its recent meeting in Birmingham, this ordinance was amended to read as follows: "In addition to the other duties of a vice president prescribed in the Constitution, he shall hold each year *two* meetings of the medical societies comprising his district—one during the summer and one during the fall."

The time is ripe for the Vice Presidents to make plans for the fall meeting.

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### ON CO-OPERATION WITH ADVERTISERS

Advertisements appearing in the Journal serve a two-fold purpose: They make possible the publication through financial aid; they bring to the attention of the profession products of established worth or details of service offered. Readers of the Journal may trust our advertisers. The Committee of Publication follows the Council on Pharmacy and Chemistry of the American Medical Association in all advertising accepted.

If such service as is offered is needed or if products advertised appeal, reciprocate by giving the firms using the columns of the Journal your support.

## Current Comment

### PUBLICITY

The consensus of opinion in the medical profession generally, says the Journal of the Kansas Medical Society, is that some sort of publicity should be supplied, by which the public will be made to understand the nature, the purposes and the results of the efforts made by scientific medicine in the prevention, control and cure of disease. While it is conceded that some publicity is advisable, in fact necessary to secure that degree of co-operation that will ultimately mean success, there are many different opinions as to the character of the publicity to be provided and the methods and media for its distribution.

The first point to be determined is what it is desirable to tell the people. It seems rather absurd that the medical profession should attempt to teach the people how to diagnose and treat their diseases. Even if it were possible that is not what the people want. They want to know that those physicians in whose care they place their health and lives are competent. This does not mean that publicity should be given to, or to the work done by, any individual or group of individuals, or to any school, clinic or hospital. Confidence in the knowledge and skill of members of the medical profession will be most permanently established when the people understand the sources of our knowledge and the methods by which it is acquired. Even among ourselves it is hard to supplant long cherished theories with scientific facts, and in order to convince the more skeptical it is often necessary to present in detail the methods by which such facts have been determined. So may the people also be convinced.

Confidence in the individual is necessary of course but that is a proposition for him alone. Confidence in scientific medicine, on the other hand, is a problem with which the whole profession is concerned, and it is for the purpose of establishing such confidence that publicity campaigns should be planned and conducted by such organizations as ours.

The Sixty-Fifth Consecutive Annual Session of the Association will convene in Mobile, April 19-22, 1932.





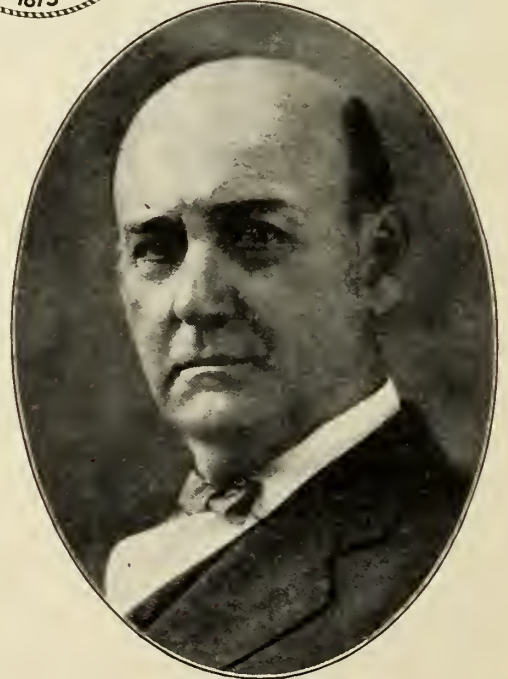
L. L. HILL, Montgomery  
1897-1898



C. C. JONES, East Lake  
1904-1905



W. H. BLAKE, Sheffield  
1910-1911



R. S. HILL, Montgomery  
1913-1914

PAST PRESIDENTS OF THE ASSOCIATION

## PROCEEDINGS OF THE ASSOCIATION

TRANSACTIONS OF THE SIXTY-FOURTH CONSECUTIVE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA, HELD AT BIRMINGHAM, APRIL 21-24, 1931.

### First Day—Tuesday, April 21

The Medical Association of the State of Alabama convened in the ballroom of the Thomas Jefferson Hotel and was called to order at 10 A. M. by the President, Dr. W. G. Harrison.

In the absence of Rev. Henry M. Edmonds, the Secretary of the Association was asked to open the meeting with prayer.

The President introduced Dr. J. R. Garber, President of the Jefferson County Medical Society, who delivered the following address of welcome:

#### *Members of the Association:*

The Jefferson County unit of the Medical Association of the State of Alabama is happy to be the hosts on the occasion of this family reunion. The Jefferson County doctors earnestly hope that the occasion of this convention and your hosts will be linked in your minds as pleasant and profitable memories. We have prepared for this meeting with the expectancy of evincing our admiration for the progress that has been made in medical science, of which the Jefferson County Medical Society is a diligent patron, and of softening all asperity that may have arisen from misunderstood decisions. We recognize the value of such a gathering, as it furnishes the inspiration and formulae for our profession to contribute its part in working out the inevitable apotheosis of humanity. Through such a medium as this we gather knowledge that prepares us to more fully and genuinely appreciate the philosophy of the writer who said: "Learning is an ornament in prosperity, a refuge in adversity, a provision in old age". It goes further than this, inasmuch as we are reminded that from contact and the enjoyment of comradeship fraternalism, like learning, is an ornament in prosperity, a refuge in adversity, a provision in old age".

Let us not forget that we are men met on the common ground of universal fellowship and that such occasions as this live in our hearts forever. They color our outdoor life, all our business contacts, all our closer communion of home; they make a man kindlier, a better neighbor; they impart a broader charity for the faults of others and keep a keener guard upon our own; they sink all remembrance save that we are men with kindred pursuits, pleasure and hopes; they inspire us with a further incentive to action; they teach us to labor and wait; they mingle in the cup of our fraternal fellowship all the ingredients known to the pleasure of life and flavor the flagon with all the myste-

rious dreams and hopes of the borderland beyond the deep, dark river that bounds our finite lives. Let the years go by like shadows on the wall, and let us enjoy each rapid, noiseless revolution of the wheels of time as they speed past epochs and eras. Let us, while we may, on these occasions, in these moments snatched from the cares and toils of existence, taste the sweets of friendship and fellowship. These hours are consecrated to the most exquisite of human joys, where self is immolated upon the common altar of human brotherhood. Hence, it but remains for us to enter into the spirit of this convivial convocation. Let us, for the time, forget the world with its cares; its sorrows; its ambitions and only remember that great or graded, victors or vanquished we can meet on the common platform of human sympathy and perfect good fellowship. Man, wearied by toil, saddened by duplicity, ill from mocking hope deferred, gladly turns to the one flower that conceals no thorn, the one joy that has no balancing sorrow—I mean the sanctuary of good fellowship.

Because of these higher and nobler purposes you bring to us on this occasion, we extend a cordial and wholesome welcome. Because of the good times we expect to have with you we extend a glad-some welcome. Because it's you, our confreres and colleagues, we bid you a hearty welcome.

The Vice President of the Northeastern Division, Dr. W. M. Salter, Anniston, took the chair and the President read his address,<sup>†</sup> which was referred to the State Board of Censors.

#### REPORTS OF OFFICERS\*

President Harrison called for the report of Vice-President M. O. Grace, Ozark. In the absence of Dr. Grace, the Secretary was directed to enter the report in the minutes of the session after it had received the consideration of the Board of Censors. The report follows:

#### *Report of Vice President Grace*

*Mr. President and Gentlemen of the Medical Association of the State of Alabama:*

Before recounting the activities and routine taking place in the Southeastern Division since our last report, we are presuming to bring in another matter for brief comment.

It may be contended, logically perhaps, that this matter is only very remotely related to the problems legitimately fit for discussion before this body. However, it is on our heart, and we dare say that

<sup>†</sup>The President's Message appeared in the July issue of The Journal.

\*For the action of the Board of Censors on the reports of officers and committees the reader is referred to page 22 of the July number.



it has at some time received the serious consideration of every member of this Association.

We are referring to the rapid, and much to be deplored, passing of the "family doctor" from the scene of activities in medical circles and in community life. Within the last quarter century, this species of the medical fraternity has passed from a status of being as thick as "black birds" to the rarity of the American Eagle. Many of us who have not more than a quarter century of practice behind us can testify to this fact. In our own case, when we entered general practice, no inland hamlet existed in our county that did not boast its resident physician. He was "Family Doctor" in every thing that the term had come to imply, to the community which he served. Now every one has gone. For better or for worse, both for the communities and for the profession, is the question which is at least open to serious and honest argument.

We, of course, know that some things directly and some things indirectly have conspired together to bring this situation about. Among the things with direct bearing may be mentioned state and county health agencies, the era of specialists in the profession and the universal trend towards hospitalization. Indirectly there are highway improvements, motor transportation and the eternal human yen to seek farthest from home for that which is thought to be best—the entertained fallacy that distance lends virtue.

Personally, we deeply deplore the enforced elimination of that grand character among the children of men officially described as the country or family doctor. We should make a plea for justice to him before his breed grows extinct. We would entreat official health agencies to encroach no farther upon his rightful field of service. We would even dare suggest that these agencies confine themselves entirely to their field of education in sanitation and prevention by indoctrination of the people, and leave actual practice to the family doctor. We would entreat the specialists to look upon the general practitioner as a community necessity and extend to him the right hand of fellowship. Above all, we would entreat the people to sacrifice not the great asset which is theirs in the resident, family physician—this one, who, through long association and helpful service has come to be so much more to the community than a mere professional servant; this one who for so long has shared in their joys and suffered with them in their defeats and sorrows, and builded with them a wholesome, courageous, successful community life. The world will not be as well off without the family doctor.

The Southeastern Division has experienced practically no change in its statistical position. The figures in respect of this which were reported last year are about the same.

One very profitable and enjoyable district meeting was held last year, with Enterprise in Coffee County being the host. The physicians of that thriving city were most heartily backed by their people in affording royal entertainment to the visitors. A very excellent program was given. Among the essayists were Drs. J. B. Woodall, New Brock-

ton; Brannon Hubbard, Bruce Holding, W. W. Wilkerson and H. P. Dawson from Montgomery; C. R. Bennett, Eufaula; R. B. Beard, Troy; A. D. Matthews, Ariton, and G. R. Smith, Ozark.

Dr. G. F. Littlepage, Sheffield, Vice President of the Northwestern Division, presented the following report which was referred by the President to the Board of Censors:

#### *Report of Vice President Littlepage*

*Mr. President and Gentlemen of the Medical Association of the State of Alabama:*

The Northwestern Division of the Association is composed of sixteen counties in which there are 704 active members and 157 non-members. It is with a great deal of pleasure that I can report the membership of Lawrence and Winston counties to be 100%.

The counties in my district are showing a great deal of progress along scientific lines. There has been a total of 153 county meetings and a report of 108 scientific papers read during the year. We have written letters and sent invitations and programs to every member in the district.

I want to especially thank the members of Pickens, Tuscaloosa, Walker and Morgan counties for the splendid co-operation they have given me.

At the beginning of the year four divisional meetings had been planned but due to a combination of circumstances we were only able to have three. These meetings were held at Tuscaloosa, Jasper and Hartselle. At the Tuscaloosa meeting a two day program was planned. On Friday, October 3rd, the Nott Memorial Program was held at which time we had the unveiling of the portrait of Dr. Josiah Clark Nott, founder and first professor of surgery in the Medical College of Alabama. On Saturday the Northwestern Division of the Association held a meeting with a clinical program by Mobile graduates. At these three meetings we had especially interesting programs and good attendance.

Contributions to the programs were made by Drs. C. L. Lamar, A. S. Taylor, W. G. Harrison and T. K. Lewis of Birmingham; Shields Abernathy and W. C. Chaney of Memphis; A. C. Jasper, Jasper; and J. N. Baker, Montgomery.

I would like to recommend that the vice presidents be allowed to hold three divisional meetings during the year instead of four as is now customary. I would suggest that the March meeting be eliminated due to the fact that there are so many medical meetings and particularly because the March meeting is so close to the annual session of the Association.

President Harrison presented Dr. K. A. Mayer, Vice President of the Southwestern Division who rendered the following report:

# *Report of Vice President Mayer*

*Mr. President and Gentlemen of the Medical Association of the State of Alabama:*

Since the last meeting of the Association I have pursued my former course of trying to visit all county societies in my division. This I have done with few exceptions, urging upon them all the necessity of an all time health officer. I am proud to say that most of the counties in the Southwestern Division now have them. Likewise I have urged courts of county commissioners to make suitable appropriations for full-time health service. Some have done so. Others have assured me they will do so just as soon as financial conditions warrant.

I feel that this will be of more lasting benefit to the Southwestern Division than any other work I could possibly do.

We have had a number of clinics for the indigent in this division and many children have been relieved of their infirmities. Efficient physicians and surgeons have given their time and services treating and operating upon these indigents, for which we are very grateful.

The report was referred to the Board of Censors.

The Vice President of the Northeastern Division, Dr. W. M. Salter, Anniston, presented his report which on being read was ordered referred to the Board.

# *Report of Vice President Salter*

*Mr. President and Members of the Association:*

I have visited nine of the seventeen counties in the Northeastern Division during the year. I have written letters to each secretary of the seventeen counties urging that monthly meetings be held and that a scientific program be scheduled for each meeting.

Nine of the seventeen counties hold monthly meetings and have had four or five scientific programs. Three counties have bi-monthly meetings and have scientific programs at each meeting. Two counties have monthly meetings and a scientific program at every meeting. Three counties meet only two or three times a year and have no scientific program. One county, Cleburne, has only three members. Thirteen counties have organized health units with an all-time health officer. The organized counties are doing efficient constructive work and are co-operating with the State Health Department.

Calhoun, Talladega, Etowah, Madison and Marshall counties are well organized. The scientific programs held in these counties are as good as held anywhere in America. My own county, Calhoun, held fourteen scientific meetings and one public health meeting, which was well attended by the public.

Dr. G. A. Cryer, County Health Officer, Dr. D. L. Cannon and our President, Dr. W. G. Harrison, were the essayists for the public health meeting. If public health meetings were held two or three times a year in every county of the State, the pub-

lic and the medical profession would understand each other better and I am sure the chiropractor and representatives of other cults would soon disappear from our midst.

Quarterly meetings were held at Huntsville, Gadsden, Roanoke and Anniston with an average attendance of fifty-three members. Scientific papers were read and interesting cases reported.

The scientific papers in all of the meetings were freely discussed. A great many of the doctors present expressed themselves as getting more out of the divisional meetings than out of the larger scientific meetings.

The scientific papers that have been read in the Northeastern Division have been educational and instructive, and I am sure they have been thus in the other divisions. I recommend to the Board of Censors and to the Association that these papers be filed with the vice president of each division, and the vice president in turn file the papers with the Secretary of the Association and that they be printed in the Transactions. I also recommend to the Board of Censors and the Association that means be provided to take care of the expenses incident to the divisional meetings.

In the Northeastern Division the expense in putting on a program is about \$25.00, apportioned as follows:

Postage .....	\$8.50
Printing programs .....	6.00
Entertaining guests .....	5.00
Stenographer .....	4.00

This expense has to be provided for by the vice president, unless the county society that entertains the division is able to bear the cost. I find it difficult to get the smaller counties to entertain a meeting of the Northeastern Division on account of the above expense.

Dr Douglas L. Cannon, Secretary, presented the following report which the President referred to the Board:

# *Report of the Secretary*

Your secretary has the honor of submitting the following report:

The membership of the Association as enrolled April 1, 1931 is 1,670—79.6 per cent of the physicians in the State. There are 2,098 physicians in Alabama according to the records of the Association—an average of one to each 1,261 people, based on the census of 1930. With increase in population there has not been a proportionate increase in physicians. As a matter of fact there were forty-four less physicians in the State on April 1 than on April 1, 1929. Several factors have operated to bring about the decrease. For example, the number of our members joining the staff of the Veterans' Bureau has not been an insignificant one. Death, too, has played its part.

Life Counsellors Julius Jones, R. J. Redden and R. L. Sutton have been among those answering the last summons.

At the last meeting, Dr. J. S. Hough of Livingston was elected a counsellor. He has duly quali-



fied and at the proper time should be added to the Roll of Active Counsellors.

There are to be elected at this meeting: a president, a vice-president for the Southeastern Division, two censors for five years to succeed Drs. D. T. McCall and J. S. McLester, whose terms expire; and counsellors as follows: one to succeed J. C. McLeod of the Second District who is to be elevated to Life Counsellor; one to succeed G. C. Marlette, also of the Second District, who has changed his place of residence; and five to succeed M. H. Hagood, R. L. Hill, E. M. Mason, W. S. Rountree and J. J. Walls whose first terms of seven years expire.

To succeed Dr. A. A. Walker as delegate and Dr. L. E. Broughton as alternate to the American Medical Association, President W. G. Harrison appointed Dr. Seale Harris and named Dr. W. W. Harper as his alternate. They will serve during the 1931 and 1932 sessions.

In the places of those whose terms of service on the committees of the Association expired with the 1930 meeting, the President appointed the following to serve five years:

Mental Hygiene.....	W. D. Partlow
Prevention of Blindness.....	P. S. Mertins
To Meet Druggists.....	O. S. Justice
Hospitals.....	DeWitt Faucett

W. S. Littlejohn was appointed to fill the unexpired term of Dr. B. L. Wyman (deceased) on the Committee on Mental Hygiene; Clyde Brooks was named to fill the unexpired term of Dr. L. W. Johnston (deceased) on the Committee to Meet Druggists.

Those whose terms of service on the committees of the Association expire with this meeting are:

Mental Hygiene.....	G. G. Woodruff
Prevention of Blindness.....	H. B. Searcy
To Meet Druggists.....	J. D. Heacock
Hospitals.....	W. J. Callaway

It will be incumbent upon the incoming president to fill these vacancies and to appoint two delegates to the American Medical Association to succeed B. S. Lester (alternate—J. D. Dowling) and J. N. Baker (alternate—E. W. Rucker) whose terms will end with the 1931 meeting of the national body.

It will also be the privilege of the new president to appoint fraternal delegates to sister medical associations.

The Association has in its files one complete set of Transactions dating from 1851. It would appear that the volumes of 1847, 1848, 1849 and 1850 were not preserved. This occasions regret inasmuch as the earliest years of our history were no doubt most interesting. These preliminary statements bring me to the point of requesting you, who may know of the existence of extra volumes of any of the years up to the present, to so advise me. It is important that a duplicate set be built up, if possible. In this connection, I should like to express my thanks to Mrs. S. C. Cowan, who donated to the Association several volumes from Dr. Cowan's library.

A year ago I spoke to you relative to a blanket policy against loss from the liability imposed by

law for damages on account of bodily injuries or death suffered by any person or persons in consequence of error, malpractice or mistake. Under such policy indemnity of \$5,000 for a single case and \$15,000 for a single year was offered at a cost of \$22.50 annually. In reply to a letter sent on June 10, 1930 to all members of the Association (with the exception of those residing in Calhoun, Etowah, Jefferson, Morgan and Walker Counties to whom the offer was not extended by the Aetna Life Insurance Company) scarcely more than thirty applications were received. As a consequence the project had to be abandoned for a time. The subject has been reopened at the request of certain of our members who want protection through an established company at minimum cost. In this connection I beg to quote from a warning (Montgomery Advertiser, March 31, 1931) issued by Mr. Chas. C. Greer, State Superintendent of Insurance, against the purchase of policies from companies not authorized to do business in Alabama. His admonition is as follows: "Persons seeking redress from unauthorized companies must do so in the courts of the State of domicile of the company. Alabama courts have no jurisdiction over such cases". I call your attention to this statement from Mr. Greer because I know there are members of the Association who are carrying policies in such companies. It is solely in your interest that I am acting. Commissioner Greer, in concluding his statement, said, "If you want to take a chance, buy the insurance but if the company refuses to defend you, the Alabama Bureau of Insurance is powerless to help you". Interested ones can speak or write to me in regard to the blanket policy. Let it be sufficient for me to say in concluding this discussion that if any have policies in force at the present time they may file application to become effective on the date of expiration of such policies. Application forms will be mailed you in the immediate future.

I have attended to the usual duties of the office and to others as they have arisen. It was my privilege to attend the annual conference of secretaries of constituent state medical associations in Chicago, November 14 and 15, 1930 as the guest of the American Medical Association. To the officers of that and this Association and to my confreres in the sixty-seven county medical societies, many of whom have given me assistance in the fulfillment of my duties, I again express my indebtedness.

The Treasurer of the Association, Dr. J. U. Ray, rendered, his report as follows:

### *Report of the Treasurer*

#### FINANCIAL STATEMENT

##### *Receipts*

Cash brought forward from last report* .....	\$ 3,915.99
Dues collected from 99 counsellors (Exhibit A).....	1,000.00
Dues collected from 1 counsellor elect (Exhibit A).....	10.00

\*See page 32, Transactions of 1930.

Dues collected from 67 counties (Exhibit B).....	4,510.50
Dues collected from 65 counties, delegate fees (Exh. C).....	552.00
Interest earned on daily balances .....	437.62
Cash for rosters sold .....	7.50

*Disbursements*

Salary, D. L. Cannon, Secretary .....	\$ 600.00
Salary, J. U. Ray, Treasurer .....	300.00
Clerical help .....	20.00
Brown Printing Co., Transactions, stationery, etc.....	2,525.38
M. L. Jennings Ins. Agency, premium on bond.....	8.00
Birmingham Court Reporting Co., 1930 meeting.....	540.16
St. Louis Button Co., badges.....	34.80
Postage and miscellaneous .....	145.10
	<hr/>
	\$10,433.61 \$ 4,173.44
Balance cash on hand .....	6,260.17
	<hr/>
	\$10,433.61 \$10,433.61

*Recapitulation*

Balance cash brought forward \$3,915.99	
Total receipts for the year.....	6,517.62 \$10,433.61
	<hr/>
Less—Total disbursements .....	4,173.44
	<hr/>
Balance cash on hand .....	\$ 6,260.17

*Exhibit A*

Counsellors and Counsellors-Elect Remitting Dues

Acker, P. J. M.	Greer, W. H.
Alison, S. B.	Gresham, G. L.
Ashcraft, V. L.	Hagood, M. H.
Bailey, E. B.	Hamrick, R. H.
Bedsole, J. G.	Hatchett, W. C.
Brothers, T. J.	Hayes, C. P.
Broughton, L. E.	Hayes, J. P.
Burdeshaw, S. L.	Heacock, J. D.
Caldwell, E. V.	Heflin, H. T.
Cannon, D. L.	Hendrick, W. B.
Cardon, S. C.	Hill, R. L.
Chandler, J. C.	Hollis, J. S.
Chenault, F. L.	Hough, J. S.*
Crutcher, J. S.	Howell, W. E.
Cryer, G. A.	Hubbard, T. B.
Cunningham, W. M.	Hutchinson, W. H.
Dabney, M. Y.	Jackson, A. A.
Doughty, M. E.	James, A. D.
Dowling, J. D.	James, N. G.
Dupree, M. W.	Jordan, J. W.
Faulk, W. M.	Leach, Sydney
Gordon, S. A.	Lester, B. S.
Grace, M. O.	Lightfoot, P. M.
Gragg, V. J.	Long, Clarence
Granger, F. G.	Lull, Cabot

\*Counsellor-Elect

Lupton, F. A.	Rucker, E. W.
Marlette, G. C.	Sankey, H. J.
Martin, J. C.	Scott, W. F.
Mason, E. M.	Searcy, G. H.
Mason, J. M.	Searcy, H. B.
Mayer, K. A.	Shropshire, C. W.
McAdory, E. D.	Sledge, E. S.
McCall, D. T.	Smith, R. A.
McLeod, J. C.	Speir, P. V.
McLester, J. S.	Tankersley, Jas.
Miles, W. C.	Taylor, W. R.
Miller, W. T.	Thomas, E. M.
Morris, W. E.	Tucker, J. S.
Moxley, J. B.	Turner, J. P.
Newman, S. H.	Waldrop, R. W.
Noel, W. E.	Walker, A. A.
Noland, Lloyd	Walls, J. J.
Nolen, J. A. M.	Ward, H. S.
Oates, W. H.	Watkins, J. M.
Oswalt, G. G.	White, A. L.
Price, A. B.	Whitman, C. R.
Ralls, A. W.	Wilkerson, F. W.
Redden, R. H.	Williams, M. J.
Robertson, J. W.	Williamson, G. W.
Rountree, W. S.	Wright, L. R.

*Exhibit B*

County Society Dues Collected at 1930 Meeting

Autauga .....	\$ 15.00
Baldwin .....	45.00
Barbour .....	45.00
Bibb .....	33.00
Blount .....	36.00
Bullock .....	24.00
Butler .....	39.00
Calhoun .....	120.00
Chambers .....	51.00
Cherokee .....	12.00
Chilton .....	27.00
Choctaw .....	33.00
Clarke .....	33.00
Clay .....	27.00
Cleburne .....	6.00
Coffee .....	42.00
Colbert .....	51.00
Conecuh .....	27.00
Coosa .....	9.00
Covington .....	63.00
Crenshaw .....	36.00
Cullman .....	57.00
Dale .....	42.00
Dallas .....	111.00
DeKalb .....	39.00
Elmore .....	48.00
Escambia .....	45.00
Etowah .....	144.00
Fayette .....	21.00
Franklin .....	48.00
Geneva .....	48.00
Greene .....	15.00
Hale .....	24.00
Henry .....	30.00
Houston .....	75.00
Jackson .....	33.00
Jefferson .....	1,155.00
Lamar .....	36.00



Lauderdale	66.00	Houston	8.00
Lawrence	27.00	Jackson	8.00
Lee	37.50	Jefferson	28.00
Limestone	27.00	Lamar	8.00
Lowndes	15.00	Lauderdale	8.00
Macon	33.00	Lawrence	8.00
Madison	96.00	Lee	8.00
Marengo	48.00	Limestone	8.00
Marion	39.00	Lowndes	8.00
Marshall	33.00	Macon	8.00
Mobile	240.00	Madison	8.00
Monroe	42.00	Marengo	8.00
Montgomery	201.00	Marion	8.00
Morgan	81.00	Marshall	8.00
Perry	18.00	Mobile	12.00
Pickens	42.00	Monroe	8.00
Pike	69.00	Montgomery	16.00
Randolph	39.00	Morgan	8.00
Russell	6.00	Perry	8.00
Shelby	39.00	Pickens	8.00
St. Clair	27.00	Pike	8.00
Sumter	45.00	Randolph	8.00
Talladega	78.00	Russell	8.00
Tallapoosa	57.00	Shelby	8.00
Tuscaloosa	117.00	St. Clair	8.00
Walker	132.00	Sumter	8.00
Washington	30.00	Talladega	8.00
Wilcox	51.00	Tallapoosa	8.00
Winston	30.00	Tuscaloosa	8.00
		Walker	8.00
		Washington	8.00
		Wilcox	8.00
		Winston	8.00

*Exhibit C*

## Delegate Dues Collected at 1930 Meeting\*

Autauga	\$ 8.00
Baldwin	8.00
Barbour	8.00
Bibb	8.00
Blount	8.00
Bullock	8.00
Butler	8.00
Calhoun	8.00
Chambers	8.00
Cherokee	8.00
Chilton	8.00
Choctaw	8.00
Clarke	8.00
Cleburne	4.00
Coffee	8.00
Colbert	8.00
Conecuh	8.00
Coosa	8.00
Covington	8.00
Crenshaw	8.00
Cullman	8.00
Dale	8.00
Dallas	12.00
DeKalb	8.00
Elmore	8.00
Escambia	8.00
Etowah	8.00
Fayette	8.00
Franklin	8.00
Geneva	8.00
Hale	8.00
Henry	8.00

\*Clay and Greene Counties did not remit dues for delegates; Cleburne remitted for one.

The report was referred to the Board.

## REPORTS OF COMMITTEES

*Report of The Publishing Committee*

Seventeen hundred copies of the 1930 Transactions were executed by the Brown Printing Company, of Montgomery, at a cost of \$2,176.17, distributed as follows:

Printing—572 pages at \$2.60	\$1,487.20
Binding	595.00
Wrapping—1,643 copies at .02	32.86
25 copies of Part III (The Roster)	15.00
13 cuts	46.11
	<hr/>
	\$2,176.17

Cost of distribution amounted to \$154.72. The edition was apportioned as follows:

To Essayists	10
To Libraries	6
To Members and Counsellors	1,626

The remaining copies (eighteen) were deposited in the office of the Secretary.

President Harrison directed that the report be transmitted to the Board of Censors for its consideration.

Dr. G. G. Woodruff, Chairman, presented the report for the Committee on Mental Hygiene. The report was referred to the Board of Censors.

*Committee on Mental Hygiene*

The very nature of the subject of mental hygiene makes it impossible at this time to report any one outstanding accomplishment for the past year. Your Committee feels, however, that it is able to report some progress being made in this particular branch of the public health program.

The main problem that faces us at present is one of education of the laity along lines of mental hygiene, in order that we may sow seeds of prevention. A splendid work has been done by Dr. Partlow and his staff at Bryce Hospital and the Partlow State School in the clinics and lectures given the psychology and sociology classes from the University, Howard, Birmingham-Southern College and Alabama College, Montevallo. In these clinics the various types of mental diseases are presented and the causes and factors behind the conditions are described. The Alabama Mental Hygiene Society is taking the lead in educating the public generally, and at present is working on plans to inaugurate co-operative activity between the various state departments and organizations in order that clinical facilities might be available, other than that of the State hospital. In our educational institutions courses have been added; extension courses in parental education are being given by several institutions; radio talks have been given by the leaders in this work from our schools; a program of studies has been prepared by members of the Society for the parent-teachers organizations and weekly talks are given, in this connection, by experts from the different institutions and the state department.

Probably the most definite piece of work in constructive mental hygiene is being carried on at the Partlow State School. At this institution not only are the feeble-minded segregated, thus preventing their proliferation, but all those of both sexes who are dismissed from the institution are sterilized, thus preventing their increase after leaving the school.

It is hoped that the members of the State Medical Association will co-operate in every way possible with any agency that is attempting to educate the people along lines of mental hygiene and that every means at our command will be used to spread the gospel of clean and healthful living, as well as healthful mating, to the end that these diseases may be ultimately prevented.

At this point the President extended the privileges of the floor to Dr. William Ernest Findeisen of the United States Navy, who expressed his appreciation of the courtesy extended.

The report of the Committee on Prevention of Blindness was rendered by the Chairman, Dr. H. B. Searcy of Tuscaloosa.

*Report Of The Committee On Prevention Of Blindness*

The Committee on Prevention of Blindness wishes to introduce three resolutions.

*A Resolution*

Whereas, The problem of prevention of blindness is such an important one and one in which the entire State is interested, and

Whereas, The Committee on Prevention of Blindness has been unable to obtain information from various sections of Alabama regarding the prevalence of blindness, and

Whereas, The problem of prevention of deafness is equally as important, requiring the earnest consideration of all oto-laryngologists of the State; therefore be it

*Resolved*, That a section be formed in the Association to be composed of all members specializing in eye, ear, nose and throat; that this section shall meet for one session during the annual meeting of the Association for the discussion of subjects of interest; and that proceedings of the section be reported to the Association before adjournment of the annual session of that body.

*A Resolution*

Whereas, There are no statistics of value as to the number of cases and the causes of blindness in Alabama, and

Whereas, Deafness also is of equal importance; therefore be it

*Resolved*, That the State Committee of Public Health take such steps as are indicated to include among conditions to be reported to the State Department of Health all cases of defective sight under twenty-one years of age in which corrected vision with both eyes is below 20/200; that, as a part of the report the history and cause of the defect be given; and be it further

*Resolved*, That deafness be made a reportable condition.

*A Resolution*

Whereas, We have been informed that the State does not provide funds for special eye examinations or treatment of students in the Alabama School for the Blind at Talladega; and that counties from which the students come do not provide for an examination but follow the example of the State and depend on gratuitous examinations by sympathetic ophthalmologists, the practice resulting in admittance to the school of many students with defects of vision that probably could be corrected, and

Whereas, There are many students in the State School for the Blind, with vision so poor as to make attendance in a regular school impossible yet with sufficient vision to make Braille unnecessary, who are not provided with educational facilities adjusted to their needs, and

Whereas, No special eye examinations have been regularly made of students admitted to the State School for the Blind and no provision made for examinations after admittance, resulting in an absence of reliable statistics as to the history, cause and degree of the blindness of such students and an estimate of the number that could be improved by proper treatment; therefore be it

*Resolved*, That the State Health Department in co-operation with the Department of Education thoroughly investigate the School for the Blind and



determine some method whereby all students admitted may be examined both at home and again at the institution regularly by specially appointed ophthalmologists; that equipment be furnished by the State for such examinations; and that reasonable remuneration be paid by the State for services rendered; and be it further

*Resolved*, That similar steps be instituted in connection with the School for the Deaf.

The President referred the resolutions to the Board.

The report of the Committee on First Aid was presented by Dr. J. D. Heacock, Chairman, and ordered referred to the State Board of Censors.

#### *Committee on First Aid*

It is assumed that the interrelationship between first aid and the processes of public health is the reason why a committee was created to report annually to this Association on this forward movement.

First aid, as the name indicates, was introduced into industrial life for the purpose of reducing suffering and increasing the chance of recovery by prompt and proper treatment when medical attention was not immediately available.

Up to a few years ago, it was considered sufficient to have a few highly trained men to take care of emergency cases until the patient could be placed under a doctor's care, but in the spring of 1929, the Alabama Mining Institute, realizing the value of first aid training as an accident preventive, started a drive for one hundred per cent training among the employees of the coal and ore mines, with results as shown below:

#### *Number of Employees Trained*

Number of Operations	To Date		
	1929	1930	1931
32 Coal mines with 100% training .....	406	5,321	1,826
2 Ore mines with 100% training .....		656	.....
8 Industrial plants connected with coal and iron industry .....	37	976	.....
42 Total with 100% training .....	443	6,953	1,826
In coal mines, ore mines, industrial plants and cement plants with only part of employees trained .....	1,476	3,748	589
Total trained .....	1,919	10,701	2,415

The above report does not include 1,242 employees of the Alabama Power Company and Southern Bell Telephone & Telegraph Company, trained by company experts, not eligible for the U. S. Bureau of Mines' certificates, as they can only be presented to employees of the mining and allied industries.

The result of this increase in the number of trained men is a decrease in the number of accidents (as well as a large decrease in the severity

rate), due to the proven fact that such training assists materially the habit of Safety First. One large industrial plant in the Birmingham District states that since all of its employees have received training the number of accidents has been reduced approximately 15 per cent. Another large coal company claims that the untrained half of their employees lost eight times as many days from accidental injuries as the other half who had received first aid training, according to a careful check made over a period of six months. The severity rate, of course, was a large factor in this comparison, although there was, also, a great difference in the number of accidents. This company now insists that all employees be trained.

This extensive training combined with intensive educational work and close supervision resulted in a marked reduction in fatal and non fatal accidents in the latter part of 1930, and a still greater reduction so far in 1931.

During the first quarter of 1931 only six fatal accidents occurred in the coal mines of Alabama, as compared with twenty-five during the same period in 1930 and fifteen in 1929. No complete records of non fatal accidents are available, but one coal mine, with over 200 employees, operated eleven months and 20 days during 1930 without a lost-time accident, while many other mines have records almost as good.

The above mentioned data were secured from the Alabama Mining Institute through courtesy of Mr. Jas. L. Davidson, the Secretary.

There is another field of activity wherein first aid is fostered which, in the minds of the Committee, promises much for the future and that is the public schools.

We are told by one of the Superintendents of the Birmingham City Schools that it is now a part of the curriculum of the public school system and falls under the head of the science department.

Besides its own standard text book the text of the American Red Cross is also used.

As the Committee sees it, a comprehension of the methods and purposes of the first aid movement can but challenge the hearty support and encouragement of our profession.

President Harrison asked Dr. Heacock to continue with the report of the Committee to Meet the Druggists.

#### *Report of the Committee to Meet the Druggists*

Your committee has recently had a conference with a like committee from the Alabama Pharmaceutical Association. The meeting was rather informal with a small representation from both associations.

It was ascertained, however, that the Alabama Pharmaceutical Association is now quite active and has made advances within the last two years looking to the standardization of their organization as a real profession.

They have established a full three-year course as a requirement for the Ph. D. degree and are endeavoring to establish and make legal a four-year course. The organization has some favorable bills before the Legislature at this time which will com-

pel all who are engaged in dispensing medicine (including department and commercial stores) to employ a registered pharmacist.

After the proper status, legally and otherwise, is established by the Alabama Pharmaceutical Association, then many irregularities and untoward conditions can more easily and readily be ironed out.

The report was referred to the Board.

The President called for the report of the Committee on Maternal Welfare whereupon, at the request of the Chairman, Dr. J. R. Garber, the Secretary introduced the following resolution

*Report of The Committee on Maternal Welfare*

*A Resolution*

Whereas, The findings of a recent study of the causes of maternal mortality in Alabama show that Alabama mothers receive less prenatal care than mothers in any of the fifteen other states studied, and

Whereas, A higher percentage of deaths from puerperal albuminuria and convulsions occurs in Alabama than in any of the other states studied; therefore be it

*Resolved*, That the Board of Censors of the Medical Association of the State of Alabama be asked to give its most serious consideration to this problem; and be it further

*Resolved*, That it carefully review the constructive recommendation made by the Committee on Maternal Welfare and adopted in the session of 1928; and be it further

*Resolved*, That it invite further suggestions and recommendations from interested sources and devise a practical program for the amelioration of conditions which are responsible for Alabama's high maternal mortality rate.

The resolution was referred to the Board.

Dr. John W. Simpson, Chairman, presented the report of the Committee on Infant Welfare. After its presentation, the President ordered it referred to the Board of Censors.

*Report of The Committee on Infant Welfare*

While infant mortality has not been materially reduced as a result of study of Infant Welfare, your Committee feels that as long as this condition obtains there is a challenge to this Association to continue its efforts. Eternal vigilance and constant education is the price of increased safety.

Consideration for the human infant is slowly increasing and obligations due to it are more and more recognized. With the approval of the Board of Censors, the Committee on Infant Welfare purposes to carry forward its work the coming year with the following three-fold objective in view, conducted in each vice presidential district:

1. Medical attention: To urge the obstetrical attendant to recognize his duty to the smaller member of the child-parent duo.

2. Parental attention: To urge upon the parent that proper care and training of the infant is the parents' peculiar responsibility, even if medical care is needed.

3. Community attention: To urge upon the community that public opinion should be a powerful factor in influencing parents to assume their obligation, and should provide assistance to those parents who, under this obligation, are forced by necessity to ask aid.

At the request of the Chairman of the Military Committee, Dr. J. M. Mason, the Secretary introduced the following resolution, which was referred to the Board:

*Report of The Military Committee*

*A Resolution*

Whereas, The present Army regulations require that every reserve officer shall, during each five years' commission period, put in two hundred (200) hours military work, in camp, correspondence school, inactive training meetings, or similar military activity, or else become ineligible for renewal of his commission with assignment to an Organized Reserve Unit, and therefore revert to the "Auxiliary Reserve" in time of peace, and

Whereas, There are many highly trained, highly skilled and very active physicians who, as reserve officers, have been assigned as chiefs and assistant chiefs of surgical, medical, laboratory, roentgen and other distinctly professional services in Organized Reserve Hospital Units, carrying very little administrative responsibility, and whose professional duties in busy private lives make them especially well fitted for their duties in their army assignments, but whose same duties make it practically impossible for them to carry on military work in time of peace, and

Whereas, Many of these men and their valuable attainments are being lost to the Organized Reserve, although they are willing and anxious to serve in time of need and do not aspire to advancement in grade; therefore be it

*Resolved*, That the Medical Association of the State of Alabama, desiring that the medical profession may be of the greatest service to our country, respectfully suggests that the service might be enhanced if the regulations were changed to provide for recommission and reassignment of chiefs and assistant chiefs of professional services of Hospital Units even though they have not completed the required amount of military work; and be it further

*Resolved*, That a copy of this resolution be sent to the Surgeon and Commanding General of this Corps Area, the Surgeon General, the Officer in charge of Reserve Affairs, the Adjutant General and the Chief of Staff of the United States Army.

At 12:15 an adjournment was taken until 2:30 p. m.

(The Proceedings of the Association will be continued in the September number.)



## THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

### WHY THE PROPOSED AMENDMENT TO OUR CONSTITUTION SHOULD NOT BE ADOPTED

J. N. BAKER

Life Counsellor of The Medical Association of the State of Alabama

At the recent meeting of the Association a resolution was introduced which seeks to amend Section 6 of Article XIII of the Constitution by adding at the end of this Section the following sentence:

"The State Health Officer shall not be permitted to hold office as a member of the State Board of Censors."

The Section, with this addition, would read as follows:

"The Board shall elect from the College of Counsellors, by not less than a majority vote of its members, an executive officer to be known as the State Health Officer, and shall submit the name of the officer so elected to the Association (the State Board of Health), in annual session for confirmation. *The State Health Officer shall not be permitted to hold office as a member of the State Board of Censors.*"

One can but wonder that a member, seeking to change the organic law of this Association, did not see fit to adduce his reasons for seeking such change.

A service of many years as Secretary of this Association, in close affiliation with Dr. Sanders, a recognized authority on medical organization; subsequently as President; and later, as a member of the State Board of Censors for a number of years—such unbroken and varied service extending over a period of well-nigh thirty years is the motive which prompts the following reflections.

Inasmuch as the Health Officer is the only personality involved and inasmuch as a fundamental principle of vast importance to this Association is likewise involved, the writer shall, unhesitatingly, proceed to set forth some of the reasons why such a proposed change should not be made in our Constitution. In so doing, it can hardly be justly charged that he is plead-

ing the cause of his own candidacy in this regard; it so happens that this Association has bestowed upon him, unsought, all the honors within its gift, including the present one of State Health Officer.

The constitution of any organized group is an important document. In it are set forth the purposes, aims and objects of its constituent members together with the qualifications of its membership and appropriate rules and regulations governing such membership. The best thought and the best brains of such a body are usually thrown into the construction of this instrument.

It is a significant fact that practically all constitutions, upon completion and adoption, carry the additional safeguard that no change nor alteration can be made therein except after a given length of time and by a two-thirds vote of the voting strength present.

Furthermore, constitutions are not to be subjected to whimsical change; alterations therein should be made only for good and sufficient cause, and when the object sought could be accomplished only through constitutional change. As this argument unfolds, it will be seen that this proposed amendment scarcely qualifies in any of these particulars.

So much for generalities.

In the Constitution now under discussion, no one would make so bold as to assert that an almost uncanny prescience, wisdom and forethought were not displayed in its framing.

Cochran, its creator, deliberately and boldly sought to engraft upon this Association, fundamentally and primarily a scientific body, two important arms of State Government—Public Health Work and Medical Licensure—the resultant to be a triune being, one and indivisible. To frame a constitution so that these three important elements might be efficiently and harmoniously fused was a difficult task and necessitated increase in the complexity of its structure. To propel a canoe on a placid

stream is a simple piece of pilotage and requires little else than physical force; to steer an "ocean-liner" through turbulent waters calls for experience and skill of the highest type. A Justice of the Peace is one thing; a Chief Justice of the Supreme Court quite another.

These complexities exist and are inherent in the structure of our organization and of our Constitution. The writer's sole criticism of our system would be the difficulty of obtaining an understanding grasp of it because of these complexities; a grasp which can be had only through reflective study and intimate contact, and which contact is not usually afforded the average member. Such being the case, a certain amount of leadership, grounded upon experience and training, becomes a *sine qua non* to the successful and efficient operation of this organization functioning in these three manners. It is conceivable that uncontrolled leadership might, through selfish or political ambition, be perverted into unwholesome channels; but anxiety on this score is dispelled by a careful reading of the Constitution which provides ample safeguard resting within the voting strength of our Association.

Since the adoption, in 1873, of this Constitution, our Association has continuously functioned in this triplicate capacity, and with results, which, on the whole, should be gratifying to its most pessimistic members. Because of its unique features, it has won for itself the admiration and envy of all who have taken the pains to acquaint themselves with its working parts. To pause here in order to point out the achievements accomplished under this system would be but a work of supererogation; but a glimpse into some of the "set-ups" of boards of health in other states might prove illuminating.

In *Georgia*, one of our sister states, the State Board of Health is composed of fifteen members, twelve of whom are appointees of the Governor, *without any legal qualifications for membership*, and three of whom are ex officio, viz: the State Superintendent of Schools, the State Veterinarian and the Commissioner of Health.

In *Kentucky*, likewise one of our sister states, the State Board of Health consists of nine members, all appointees of the Governor, five of whom are regular physicians,

one a homeopath, one an eclectic, one an osteopath and one a pharmacist.

In *Colorado*, the State Board of Health is comprised of nine members, all appointees of the Governor, and not one of whom need be a physician.

In *Delaware*, the State Board of Health consists of seven members, all appointees of the Governor, four of whom must be physicians and three of whom must be *women*.

In *Massachusetts*, the State Board of Health, known as the Public Health Council, consists of six members, all appointees of the Governor, three of whom are physicians, to whom is added the seventh member, the Commissioner of Health.

And so it goes; in the forty-eight States of our Union, there exist forty-eight varieties of boards of health, ranging all the way from those giving no recognition to the medical profession to that of our own State, which confidently entrusts its entire health system to organized medicine. The limit of authority granted in any other state to medical associations is that of suggesting personnel to the Governor in the shaping of *his* board of health.

One sees, therefore, at a glance, that there can be no fair comparison made between boards of health in other states and that of our own. They differ as does night from day. With us the organized medical profession *is* the State Board of Health, taken over bodily by the Legislature of the State and functioning as one of the important arms of State government.

To the organized profession of no other state has been given the virile voice and plenary power in the direction and control of all public health activities as has been given to this Association. When, in the onward march of civilization, the time came to furnish to our people the latest scientific weapons in the preservation of their bodies against preventable diseases, the machinery of this organization was immediately commandeered for such service; as a consequence, Alabama forthwith forged to the front while many other states continued to aimlessly grope. As a further consequence, proper and sane direction of the public health activities of this Association became the largest single problem confronting it to-day. Of the three ways in which the State Board of Censors functions—as a State Board of Censors, as a Board of Med-



ical Examiners and as a State Committee of Public Health—the last is the most important and the most far-reaching; and, as the years roll on, will become increasingly more so; and it is as to how well, or how poorly, we function in this capacity that we shall stand, or fall, in the eyes of the people of our State. Should we fail in this, one may feel reasonably sure that the Association's voice will be correspondingly muffled in all legislative matters and at a time when the medical profession of the entire world is struggling for a decent recognition of its high ethical principles. The doctors of this State are afforded the privilege of selecting one of their own trained members as a director of public health, whose sympathetic understanding of the doctor's manifold problems has never, in any instance, been questioned. This unique and rare privilege must ever be borne in mind and constitutes one of the most valuable assets of the organized profession.

The Board of Censors of this Association is preeminently a *deliberative* body; to it are referred not only all questions of interest to the Association as a scientific body, but also those having important and far reaching legal bearings on the administration of public health and medical licensure in the State; as shown above, our major problems now are, and will continue to be, problems in public health. One might suppose that a board of ten men, composed of busy doctors and whose services were of an entirely gratuitous and sacrificial nature, when saddled with the onerous duty of safeguarding the health and lives of two and two-thirds million people, would welcome to its midst *one* member whose entire time was devoted to the study of public health measures and to the machinery through which such work was to be prosecuted.

To the writer's mind, the somewhat specious arguments which have gone the rounds of being "undemocratic," "political," "czaristic," fall flat to earth in the face of the higher and nobler obligations which plainly are ours. One should remember that a profusion of democracy, in a purely deliberative body, does not always make for efficiency. It should require no great stretch of the imagination to see that service on this Board demands not only calm and mature judgment but also a familiarity with the health laws of the State

and with our Constitution, its usages and policies. The timber to be utilized on this Board cannot be too well seasoned, nor too carefully chosen.

Nowhere in this Constitution does it appear that the State Health Officer either *must*, or *must not*, be a member of the State Board of Censors. Even though the present or any other State Health Officer were consumed with a burning desire to become a permanent member of this Board, he could only do so by a majority of the voting strength of this Association; the present State Health Officer is not now a member of this Board and the decision as to how this officer of the Board can best serve the interests of the Association should ever rest with its members; it rests there now and it should continue to rest there. In this connection, one can but wonder what will be the likely fate of those "precious privileges of democracy" for which some members of this Association have long been battling, if this superfluous amendment be written into our Constitution, which now neither abrogates nor abridges the rights of its members in the important matter as to *how* the State Health Officer shall serve them.

An analysis of the relationship existing between state boards of health and the state health officer in the forty-eight states is as follows:

- (a) In 23 states the health officer is a member of the board.
- (b) In 14 states the health officer is not a member of the board.
- (c) In 5 states the health officer may or may not be a member.
- (d) In 3 states the relationship is not stated.
- (e) In 3 states there are no boards of health.\*

The personnel of our Board is a changing one from year to year; two years or five years from now the complexion of the Board might so change that the Association might desire to avail itself of the service of the State Health Officer on such Board. Would it be the part of wisdom to so alter the Constitution as that it could *not* do so? One must not lose sight of the fact that all of the past achievements which have been won by this Association have been won with the State Health Officer as a member of the Board. It is not meant to convey the impression that solely because of

\*Bulletin 184, U. S. P. H. S. 1929.

such membership victories were won; nor that, in the absence of such membership, victories would not have been won; but an impartial review of the past history of our Association will certainly justify the conclusion that he was an important member of this Board.

If these things be true—and no one can say that they are not—might not one soberly ask:

Why should this Association, by *unnecessary* constitutional amendment, seek to forever bind its hands and fetter its feet

in a manner which it might subsequently regret?

In conclusion, then, the writer would say to the members of this Association and more particularly to its younger members into whose hands its destinies will shortly pass—

*Preserve, with great zeal and care, this Constitution; into it are deep-set, like precious gems, the foundation stones upon which repose the glory, the grandeur and the practical achievements of this organization.*

## DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF ADMINISTRATION

J. N. Baker, M. D.

State Health Officer in Charge

One of the hampering drawbacks of a "pure democracy" is the ease with which, by but a turn of the political wheel, a nation or a state may be deprived of the benefits of the dreams and visions of a really great soul. The people of this entire Nation have cause to rejoice that Senator Joseph E. Ransdell, of Louisiana, not only had the vision, but was permitted to see it blossom and bear fruit, before relinquishing his seat in the United States Senate.

As the years roll on, this vision, taking concrete shape in the form of "The National Institute of Health" will stand forth as a beacon light in the onward march of scientific progress. In his remarks before the Senate, in February of this year, one senses how utterly wrapped up he was in the thought that an institute, modelled and manned after his own concept, would prove one of the rarest blessings of mankind.

Let us have from his own lips the purposes of such an institution:

The definite object of the National Institute of Health is to promote the health of human beings, to improve their earning capacity, to reduce their living expenses, to increase their happiness, and prolong their lives. It serves unselfish interests, and its beneficent results will enter every home on earth.

The main purpose of the institute is to arouse our people to the imperative necessity and wisdom of preventing the innumerable diseases that afflict humanity and of making life more comfortable and happy by assuring good health, the greatest of

temporal blessings. The practical effect of the legislation is to enlarge very much the work of the Public Health Service and to enable it to cultivate a much larger field in public-health research.

or, again, his remarks on the necessity for leadership in the cause of public health:

No great peace movement has ever been successfully culminated, no decisive battle won, except through intensive work on the part of those serving in the ranks under the leadership of one man. During the World War the allied forces, while partially successful, were not making satisfactory headway until Foch was appointed supreme commander. The Italians, the French, the English, the Americans, and all forces opposing the Germans, retained their commanders in chief; but the one coordinating factor was Foch, who was charged with formulating plans to fight the common enemy most effectively. We need similar leadership in our battle against the countless, unseen microbial hosts, which are far deadlier than all the forces of mankind ever assembled under all the military standards since the beginning of recorded time. Senator Copeland has said that two diseases alone, influenza and pneumonia, have taken more lives than all the wars of all history.

Could the organizing ability and inventive genius of the American people be made available for leadership in the great task of building up public health, the staggering waste of sickness and human life in the United States might be stopped and the health of the Nation immeasurably improved. The people are ready for an organized advance on the forces of ill health; what is needed is leadership!

and, when he reaches the paragraph quoted below, he exclaims:

Here is something I wish everyone to listen to carefully:

Proud as we are of our commanding position in so many fields, in health matters nine countries throughout the world excel us in so far as death



rates are concerned. According to figures released by the Prudential Life Insurance Co.—

New Zealand, with a rate of 8.1 per 1,000 during the years 1921-1925, has decidedly the lowest rate, Australia and the Netherlands being second with a rate of 9.4. Then come in order the Scandinavian countries, Norway with 9.5, Denmark and Sweden with 9.6. Ontario ranks seventh with a rate of 10.3, England and Wales eighth with 10.9, Switzerland ninth with 11.4, and the United States tenth with 11.7. In other words, there are nine countries among those under consideration which had a lower death rate than the United States. Even if we consider only the white population of this country, we find that the rate was 11.2 for the last five years, still leaving eight countries with lower rates. It may be said in passing that the death rate among our colored population, which comprises more than a tenth of the total, was 16.6 for the same period.

Senator Ransdell will live on and on in the hearts of the American people as one of the real benefactors to suffering and afflicted humanity.

## BUREAU OF LABORATORIES

L. C. Havens, M. D., Director

### SEROLOGICAL TESTS FOR THE DIAGNOSIS OF SMALLPOX

The differential diagnosis of smallpox and chickenpox is often difficult and uncertain, particularly in the mild form so prevalent today. A specific laboratory test would, therefore, be helpful in establishing the diagnosis. Burgess, Craigie and Tulloch\* have developed a flocculation test which utilizes a suspension of the scabs as the antigen. They have found, in a series of over 50 cases of smallpox, that these invariably flocculated or precipitated in appropriate dilutions of immune rabbit serum, whereas similar suspensions of scabs from cases of chickenpox did not. We have, in the main, confirmed these results.†

One disadvantage of this test is that it cannot be made earlier than the end of the second week of the disease. A further objection is that the scab material occasionally gives non-specific results, flocculating in normal serum as well as in the immune serum. We have found that high dilutions of the antigens (1:1000, instead of 1:100 as

used by the English workers) prevent these non-specific reactions, which, as we have shown,† are due to the concomitant bacteria present in the scabs.

We have also found that vaccinated persons, as well as rabbits, develop specific flocculating antibodies, and, therefore, was a natural consequence to determine whether these antibodies also appear in the blood of smallpox patients. This proved to be the case. Thirty-eight specimens of blood from thirty-five cases of smallpox and eight specimens from seven cases of chickenpox have been tested. The antigen used was a suspension of vaccinia virus propagated in rabbit brain. Only one of the smallpox patients failed to develop a positive test by the seventh day.

In two cases we were able to obtain a second specimen later in the course of the disease. It is significant that in each case the titre of the serum increased. One case gave a positive result as early as the fourth day. All of the specimens from chickenpox cases gave entirely negative results.

We have, therefore, two diagnostic tests for smallpox, both of which, under proper conditions, seem to be entirely specific. The serums of chickenpox patients, who have never been vaccinated, do not flocculate vaccinia virus. The serum of smallpox patients, with only one exception, so far as our observations go, acquired the property, at some stage of the disease, of flocculating the virus.

The tests, with immune rabbit serum, of smallpox scabs invariably gave positive results in high dilutions, whereas chickenpox scabs failed to react.

The test of the patient's serum may prove to be the most useful as an early diagnostic aid, due to the fact that the antibodies frequently appear before the pustular stages of the disease. The one test, however, serves as a useful check upon the other. A positive result with the patient's serum, followed by a positive reaction, in high dilution, with the scabs, leaves no doubt of the diagnosis. A positive result with the serum alone must be qualified by the history of vaccination, after which antibodies may persist for as long as ten years. In such a case, a second specimen of serum later in the disease, should, if it is smallpox, show a higher titre. Confirmatory evidence can be gained, in such instances, by a subse-

\*Burgess, W. L., Craigie, James and Tulloch, W. J.: Diagnostic Value of Vaccinia Variola Flocculation Test. Med Res. Council, Spec. Rep. No. 143, 1929.

†Havens, L. C. and Mayfield, C. R.: Amer. Journ. Pub. Health, 1931, 21, 329.

quent test of the scabs from the patient.

The laboratories of the State Board of Health are now prepared to make these tests as routine procedures. Blood specimens should be collected as for a Wasserman test, giving the following data: (1) history of vaccination, (2) number of days since onset of attack, (3) age, (4) race, and (5) sex. Scabs may be conveniently collected in an ointment tin or our regular container for intestinal parasites. A few scabs of average size or a number of small scabs should be carefully removed to the container and sent at once to the laboratory. Only the Central Laboratory at Montgomery is at present prepared to make the test.

### BUREAU OF VITAL STATISTICS

W. T. Fales, Director  
Ethel Hawley, Acting Director

#### COMPLETENESS AND ACCURACY OF CAUSE OF DEATH AS GIVEN ON DEATH CERTIFICATE

Each month the cause of death on about 11% of all death certificates is not given with enough detail to enable accurate classification. In many cases the doctor did not see the patient in time to make a diagnosis, or the disease was an obscure one that could only be accurately diagnosed by autopsy. However, last year, 1,580 replies were received which enabled the cause of death to be classified with greater accuracy. This is about 5% of all certificates filed.

The following table gives some of the titles principally affected by queries:

	Total Deaths	Deaths Before Query- ing	Net Addi- tions	Per Cent Change
Whooping Cough.....	252	240	12	5.0
Influenza .....	942	888	54	6.1
Pul. Tuberculosis.....	2053	2018	35	1.7
Syphilis .....	436	400	36	9.0
Gonorrhea .....	34	19	15	78.9
Cancer, All forms.....	1427	1398	29	2.1
Cerebral Hem- orrhage .....	1714	1653	61	3.7
Valvular Heart Dis. ....	1354	1298	56	4.3
Broncho-Pneumonia .....	763	722	41	5.7
Lobar Pneumonia .....	1341	1247	94	7.5
Diarrhea (Un- der 2) .....	828	776	52	6.7
Chronic Nephritis.....	1922	1821	151	8.3
Puerperal Causes .....	566	511	55	10.8

Some of the causes which could not be classified without additional information, and the principal causes to which they were changed are as follows:

Unsatisfactory Term:	Num- ber of Changes:	Principal Causes to Which Changed:
Septicemia	15	3 Accidents 1 Puerperal
Meningitis and Cere- bro-spinal Menin- gitis (Undefined)	25	11 Epidemic form 5 Tuberculosis 2 Accidents
Cerebral Hemorrhage (Under 45 years)	20	9 Syphilis 2 Puerperal
Paralysis	71	5 Syphilis 6 Spinal Paraly- sis 3 General Paresis 51 Cerebral Hem- orrhage
Pneumonia (Unde- fined)	187	25 Influenza 4 Tuberculosis 52 Broncho- Pneumonia 85 Lobar Pneu- monia
Organic Heart Disease	62	28 Valvular 9 Myocardial
Acute Nephritis & Nephritis (Unde- fined)	136	82 Chronic Nephritis 21 Puerperal

### BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

#### CHEST CLINICS

Commencing on January 1, 1931, the State Board of Health inaugurated two travelling clinics for the diagnosis of diseases of the chest. At the time of this inauguration it was hoped that these clinics would fill a long felt want, particularly in making it possible to obtain an early diagnosis of tuberculosis.

It is now possible to review the first six months of operation and to estimate to some extent how these clinics are fulfilling their objectives. During these six months clinics have been held in thirty-four counties and in four of these counties a second clinic has been held. In all 2307 examinations have been made and of these 718 patients were diagnosed as having tuberculosis. An additional 455 were classed as



suspicious and as warranting a second examination at a later date. In 1121 no findings indicative of tuberculosis could be found.

In addition to the complete examinations approximately 1000 tuberculin tests were given and more than 1500 x-rays taken. Many interesting chest conditions other than tuberculosis were found, such as bronchiectasis, lung abscess, carcinoma, etc.

In every case examined a copy of the history and examination has been sent to the physician named by the patient. In no case has the patient been told the results of the examination nor has he been given any advice as to treatment. The only recommendation of the clinician is that the patient consult his physician and follow the latter's instructions.

In the thirty-four counties visited fifty per cent of the physicians in practice have referred patients for examination and are utilizing the service offered. Many of these have accompanied their patients to the clinic and consulted the clinician as to conditions found. This splendid reception by the medical profession has made the clinics a success so far and augers well for the future.

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## BUREAU OF INSPECTION

C. A. Abele, Director

In the previous issue some of the activities of the Bureau of Inspection were discussed. Milk quality control is another prominent activity of this Bureau. The U. S. Public Health Service Standard Milk Ordinance was formulated and first adopted in Alabama. Over 400 cities in this country now control their milk supplies by its application. Since October 1, 1927 thirty-seven cities have been added to the list of those in this State in which milk control is authorized, bringing the total to 65.

This work is carried on by a staff of five inspectors, all educated and trained in this subject. Every dairy is visited at four to six weeks intervals; samples are taken and examined at the State laboratories; and milk grades are determined and announced at three-months intervals. About six hundred dairies and twenty-four milk plants

are thus under constant supervision, even though they are scattered from the Tennessee line to Mobile. No milk-borne outbreaks of disease except a few scattered cases of undulant fever have occurred since this work was inaugurated.

A special feature of this milk quality control is that the milk gathered at Gallion and Harrell Station, produced in Marengo, Perry, and Dallas Counties, and shipped to Birmingham for fluid consumption, and that received by Southern Dairies at Montgomery for condensing is graded, so the producers can be paid according to quality. Nearly 8,000 dairy farm and plant inspections were made, and close to 100,000 milk samples were examined. One man now examines milk samples at the average rate of 2750 samples a month, and inspects dairy farms when opportunity offers.

An unusual feature of the activities of the Bureau is that establishments beyond the boundaries of the State, which sell products in this State, are also inspected and required to comply with the regulations. Since October 1, 1927, 648 inspections have been made in adjacent states, and in numbers of instances the sale of products has been stopped until the regulations had been complied with.

Plans for the future include:

1. The maintenance of good conditions in hotels, cafes, etc.
2. The extension of milk control to other communities.
3. Better control over roadside eating places.
4. Better control over tourist and recreation camps and wayside homes which cater to tourists.
5. Better control over the bottling of mineral and medicinal waters.

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## BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

### DO YOU KNOW YOUR COUNTY HEALTH NURSE?

One of the first things a public health nurse desires when she goes into a county is to know personally and have the good will of the physicians. Her success depends

to a large extent on the physician's understanding of her program.

Do you know about the prenatal service the nurse has to offer? She is anxious to tell you about this service and have you discuss the needs of your patients with her.

Then, there is the government bulletin "Prenatal Care" which has been carefully written and is a booklet any woman would be glad to own. You have probably received your copy of this publication; if not, you will in the future. If, after reading "Prenatal Care", you think it worth while for your patients, your county health nurse will be glad to supply them.

There are so many details your patients probably would discuss freely with a nurse, that they would think too insignificant to bother you with. The nurse is often able to reassure the patient or bring to your notice things that would otherwise escape you.

The nurse can show the patient how to make an abdominal support if you advise one. She will assist in making an obstetrical package, assuring you of this extra safeguard in a home delivery. Some of the nurses actually have such supplies which may be furnished to patients who cannot afford them.

All of these services and many others the public health nurse is eager to render, but first she must know you and have a thorough understanding of your practices, what you expect from your patients and what you expect from the nurse.

Do you know your county health nurse and are you making use of the service she has to offer?

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## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

### WHY SANITATE YOUR HOME?

Through the various county health units and special employees an intensive campaign in sanitation using uniform procedure and policy has been carried on. This is a basic activity of the State Board of Health and one which affects the whole citizenship of the State. Many feel that it inflicts individual hardships and is one of unfairness. Let us see if this can be true.

Moses, in his laws to his people, had the same fundamental idea of sanitation we have today. (This may be found in the Bible, Book of Deuteronomy, Chapter 23, 12th and 13th verses.)

"Thou shalt have a place also without the camp, whether thou shalt go forth abroad.

"And thou shalt have a paddle upon thy weapon; and it shall be when thou wilt ease thyself abroad, thou shalt dig therewith, and shalt turn back and cover that which cometh from thee."

From that time (B. C. 1451) until this day the disposal of human waste has been a constant problem to the people of the world. It has counted for untold loss of life in towns, large and small. This has been called to our attention so often and in such magnitude by the presence of the various fecal-borne diseases that their prevention has become the first major problem to which public health activities should be devoted. No group of diseases is so readily, so absolutely controllable as this one which includes typhoid fever, hookworm, bacillary and amoebic dysentery, and diarrhea.

The economic importance of these diseases can not be overestimated. They cost the State of Alabama each year in sickness, deaths and decreased efficiency a sum which is beyond comprehension when expressed in its financial equivalent.

We might ask ourselves since this is so obviously true, why isn't something done to correct these conditions? That is the reason for the sanitation program and when every home in the State of Alabama has been sanitated, this major problem will be arrested. Your home is a tiny link in the big chain necessary for 100% sanitation of the State of Alabama. If your link is not forged the chain can not be completed.

It is realized that this program will cost us something, but no investment will yield greater returns in public health and private comfort than the proper disposal of human feces. If for no one else, the children deserve this protection for these diseases take the heaviest toll from the babies, the children, and the young people.

Let us put our shoulder to the sanitation wheel and roll the town, the county, and the State over the hill.



## County Society News

*(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)*

### CHILTON COUNTY

T. J. Marcus, Secretary

The regular monthly meeting of the society was held on Tuesday, July 7, at Dr. V. J. Gragg's camp on Mitchell Lake. In addition to the doctors of the county, several physicians from Calera and Bessemer were in attendance. After the scientific program, the host served a dinner of barbecued pheasant, chicken and fried fish.

The August meeting of the society will be held on the first Tuesday.

### COFFEE COUNTY

W. A. Lewis, Secretary

At a meeting of the society on July 3 at New Brockton, Dr. W. A. Lewis presented a paper entitled "Pneumonia." An interesting discussion brought out many practical points from the bedside experience of the members.

### GENEVA COUNTY

M. E. Doughty, Secretary

Miss Vona Jones and Dr. L. S. Nichols were married June 14 at Geneva.

### HOUSTON COUNTY

F. G. Granger, Secretary

The society gave an informal luncheon at the American Legion Home, Dothan, July 7, in honor of Dr's. S. B. McPheeters and P. W. Auston, chest clinicians of the State Department of Health.

At a clinic held July 7-10, 100 cases and contacts, referred by physicians of the county, were examined for tuberculosis. It was found necessary to continue a number of applicants until the next clinic.

Dr's. A. S. Frasier, L. Hilson, N. B. Cannady and J. A. Keyton have returned to Dothan after short vacations. Dr. Hilson visited in Virginia; Dr. Cannady fished in Georgia; and Dr. Keyton spent his holidays in Miami.

The nurses' home of Moody Hospital is being remodelled.

Dr. L. A. Coleman has been ill in Lake City, Florida, for several weeks. His condition is reported as improved.

### JACKSON COUNTY

M. H. Lynch, Secretary

Dr. Rayford Hodges, Scottsboro, attended the meeting of Southern Railway Surgeons in Washington, D. C., June 23-25.

### LAMAR COUNTY

J. A. Jackson, Secretary

The society met in regular session July 6 with President G. S. Barksdale presiding. The problems, from a financial standpoint, of the general practitioner were discussed.

Dr. J. R. Lavender, Millport, has been elected to membership in the society.

A resolution was unanimously adopted calling upon the Court of County Commissioners to continue its appropriations to the health unit.

### LEE COUNTY

O. L. Chason, Secretary

The Lee County Medical Society met on the evening of June 4th. at the Animal Husbandry and Dairy Building of Auburn, where, after a discussion of the water soluble vitamins by Professor Salmon, the members of the society were conducted through the laboratories devoted to research in the vitamin content of foods.

Physicians present were most interested in evidence presented by Professor Salmon which indicates that vitamins B and G are composed of several factors. Rats and pigeons fed on differently treated aqueous extracts of source-foods showed varying deficiency symptoms, fairly constant for the preparations used. This is interpreted to mean that vitamin components present in one preparation are lacking in another, or further, that B and also G as now identified are groups rather than simple units.

Effective with the July meeting, the society has suspended its meeting until September. Due to the fact that members are attempting to observe the Thursday half-holiday practice, it was felt that attendance would be unfavorably affected during the summer, as the regular meeting night is Thursday.

Among recent prominent visitors to the Alabama Field Training Station and Lee

County Health Department were: Dr. John A. Ferrell of New York, Associate Director of the International Health Division of the Rockefeller Foundation; Dr. Moldovan and Dr. Prodan of Roumania; and Dr. Warner of the United States Public Health Service.

#### MARSHALL COUNTY

H. H. Awtrey, Secretary

For the past few months, the society has been striving to formulate some plan, or plans, whereby collections could be improved, and those able to pay their physicians would have to do so. The society has gone on record as favoring worthy charity, as all members do much charity practice, but it also went on record as opposed to letting anyone have free medical attention who is able to pay. A list of clients disposed to take advantage of physicians is furnished members of the society. Many debts of long standing have been paid by the use of this plan. Many cases have been sent back to their original physicians with instructions to settle the account, and then if the physician consulted is needed, he will go.

The meetings of the society are held on the second Wednesday evening of each month. At the July meeting, Dr. J. M. Crawford of Arab read a paper on "Some Nutritional Disorders of Infancy."

Dr. T. E. Martin is in camp at Fort Moultrie, South Carolina, where he will get his commission as Captain. He left June 29 and planned to return about July 16.

Dr. H. L. Horsley, of Boaz, has recently taken a trip to Cuba.

Dr. B. C. Scarbrough and family leave shortly for a motor trip through the Western States.

#### MONROE COUNTY

T. E. Tucker, Secretary

The Monroe County Medical Society held its regular meeting at the Monroeville Hospital on Friday, May 15, at seven p. m. A fish supper was served by Miss Margaret Busey, owner of the hospital, and Misses Dorothy Aylin and Reubena Hall of the health department. Papers were read by Dr. Toulmin Gaines, Mobile, President of the Association, and Dr. D. T. McCall, Mobile, a member of the State Board of Cen-

sors. Dr. K. A. Mayer of Lower Peach Tree and Dr. Charles Rutherford of Mobile were among the visitors. Supper was served to thirty-nine.

#### PERRY COUNTY

J. R. Long, Secretary

The semiannual report of the Perry County Health Department has brought letters of commendation to the County Health Officer, Dr. J. R. Long. Mr. Max Shiller of Marion, in a letter to the department, said, "the little extra money required to maintain the health unit is an investment in good health." Mr. W. H. Tayloe, Uniontown, stated that the report was an indication of much work accomplished.

#### PICKENS COUNTY

V. L. Ahcraft, Secretary

The society met in Reform, June 16, and proceeded in a body to visit Dr. E. P. Hill, McShan, who had been confined to his home for two months. Dr. Hill died June 29 from osteosarcoma of the left hip with metastases to the right lung.

#### TALLADEGA COUNTY

J. H. Hill, Secretary

The Talladega County Medical Society is holding its summer meetings in the evening at Shocco Springs, a resort near Talladega.

At the June meeting a delightful chicken dinner was served. The principal address was delivered by Dr. Jas. R. Garber of Birmingham on "Prenatal Care." Dr. Garber also gave a demonstration of practical pelvimetry.

## Book Abstracts and Reviews

### IDEAL MARRIAGE

A certain doctor, when consulted by a patient in regard to his wife's frigidity, said "Don't bother about it. Ninety per cent of all *decent* women are frigid." Such lack of understanding of the psychology of woman is to be found in many doctors and in most husbands. The ignorance of the husband is perhaps to be condoned when it is realized that his physician is not in a position to speak on the subject with any degree of understanding.



If any doctor is interested in the physical problems of marriage, he will find in "Ideal Marriage" by Van de Velde (Covici Friede) much valuable information presented in a concise and scientific manner. The book is not intended for the doctor who regards his patients only as cases, but for the physician who considers his patients primarily as individuals with very human qualities. The physician who feels any hesitancy or delicacy about discussing with a man or woman the intimate problems of his or her sex life, can use this volume as a book of instructions to be placed in the hands of his patient.

Chapters deal with the anatomy and physiology of the reproductive tract of both sexes, with the physiology of intercourse, and with the hygiene of the reproductive organs.

The author is planning a trilogy on marriage and the second volume will be entitled "The Prevention of Conjugal Aversion". Let us hope that the author and the translator will soon finish their task, for the second volume will probably prove as interesting as the first.

C. K. W.

### HOT WEATHER READING

If you want to forget the heat, sit in a comfortable chair, turn on the electric fan, and spend a couple of evenings reading "Devils, Drugs and Doctors," by Howard W. Haggard (Harper & Bros.). It is a story of the science of healing and while written primarily for the layman, it will prove equally instructive and probably more interesting to the physician. The first section of the book deals with the history of obstetrics. It tells of the discovery of the obstetrical forceps, of the development of the Caesarean section and Semmelweis' discovery of the mode of transmission of puerperal fever. Other sections deal with the history of surgery, of epidemiology, and of therapeutics.

There is a description of the first surgical operation under general anesthesia, of the fight on the part of the church to prevent the use of anesthesia in obstetrics, of the gradual improvement of the status of those who nursed the sick, of the methods of torturing those suspected of spreading plagues, of how John Hunter infected him-

self with a chancre in order to prove that mercury would cure syphilis. These are but a few of the dramatic incidents of medical history included in the pages of "Devils, Drugs, and Doctors".

Throughout the whole book, one cannot help but notice with what violence every great discovery of medicine was received by the public, the clergy, and the majority of the medical profession.

The book abounds with interesting illustrations. There is a drawing of an obstetrical chair which was in wide use during the 16th Century and which formed an essential item in the trousseau of every Dutch bride. There is an interesting caricature of vaccination which shows cows jumping out of the arms of vaccinated persons. There is an amusing illustration of a physician delivering a woman and protecting her modesty by keeping his hands and the outlet of her birth canal covered by a sheet. Particularly amusing is the suggestion made by Sir Walter Scott to James Y. Simpson on the occasion of his being knighted for having introduced chloroform into obstetrical practice. He suggested that his coat of arms have a picture of a naked baby and that his motto should be "Does your mother know you're out?" Many other equally delightful incidents fill the pages of this book. Even when the thermometer ranges around a hundred, the tired practitioner of medicine will find refreshment in this volume.

C. K. W.

### THE DIAGNOSIS AND TREATMENT OF ARTHRITIS

To the man who practices medicine the problem of arthritis is a difficult one. For many years the physician's eyes were focused on pathological anatomy, particularly postmortem pathological anatomy, and both functional activity and etiological factors were neglected or entirely forgotten.

In recent years the medical profession has begun to realize the enormous importance of determining the etiological causes instrumental in the production of various diseases. It is of paramount importance, particularly in treating our arthritis cases, to know the etiological cause. Many advances in our knowledge of etiology, chemistry, metabolism and laboratory methods,

enable us to diagnose more accurately and treat more effectively our arthritis cases.

A recent book written by Cecil on "Arthritis," published in the Oxford Monographs on Diagnosis and Treatment (Oxford University Press, N. Y.), is presented to the medical profession in a most attractive and readable style. It is concisely written and yet complete in every detail. It deals exclusively with the diagnosis and treatment of various forms of arthritis. He particularly stresses the etiological diagnosis of arthritis and elaborates on the treatment of specific forms of arthritis, such as, the arthritis of rheumatic fever, syphilis, tuberculosis, gout, arthritis of the menopause, and arthritis associated with typhoid, pneumonia, and scarlet fever. The salient features in differential diagnosis are dealt with from x-ray, laboratory and clinical standpoint.

Of particular interest to all is the article on chronic infectious arthritis. He discusses the bacteriological and predisposing factors of infectious arthritis and presents x-ray, laboratory and serological findings in these cases.

As regards therapy, he discusses foreign protein therapy, vaccine therapy, and the iodoxybenzoic acid treatment of infectious arthritis, stressing the relative merits of each treatment.

There is much knowledge available to us in this excellent monograph presented to the medical profession by Cecil. Those who follow these principles as outlined by Cecil will certainly be able to render their arthritis patients a better and more efficient service.

W. S. H.

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ASTHMA. By William S. Thomas. Paul B. Hoeber

William S. Thomas' book on "Asthma" published by Paul B. Hoeber contains two hundred pages filled with information. Written in large and easily readable type it appeals at once to the reader's eye. The author discusses the nature of asthma, its causes, its diagnosis, the interpretation of skin tests, non-specific treatment, and specific de-sensitization. There is an excellent chapter on bacterial vaccines—the reaction of the sensitized skin to bacteria and the use of vaccines in treating asthma being of

outstanding value and not duplicated elsewhere in the literature. Of outstanding value is the chapter on the sources of the various proteins that may cause asthma.

C. K. W.

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## *Truth About Medicines*

### IRON AND COPPER IN THE DIET

There have developed evidences that certain minerals which occur in small quantities in natural foods enter into the nutritive exchanges of the organisms in ways more important than has heretofore been believed. For many years claims of the biologic influence of a number of such elements have been heard. They are almost inevitable contaminant of foods, so that it has been extremely difficult to determine decisively whether zinc, nickel, cobalt, manganese, copper and others are chance constituents of the animal organism, or whether one or more function in some essential process. Recently attention has been focused on one of these elements by the discovery that copper possesses the property of supplementing iron in forming hemoglobin in certain types of experimental anemia. Nutritional anemia can apparently be best corrected in several species by the addition of copper as well as iron to the defective rations. There also is considerable evidence that important functions are performed by manganese. Many analyses of foods concerning the mineral content have become available so that the daily intake of these elements may be judged. Wheat bran, blueberries, whole wheat, split peas, and navy beans are rich in manganese. Calf liver, oysters, beef liver, mushrooms, currants and chocolate are rich in copper. Pork liver, beef liver, spinach, lima beans, calf liver, and navy beans are rich in iron. Vegetables and cereals are the chief contributors of iron. Fruits are an important source of all three elements. (Jour. A. M. A., July 18, 1931, p. 180.)

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### PROPAGANDA FOR REFORM

The Federal Food and Drugs Act: 1906-1931. A quarter of a century ago, on June 30, 1906, President Theodore Roosevelt



signed the Food and Drugs Act specifically designated "for preventing the manufacture, sale, or transportation of adulterated or misbranded or deleterious foods, drugs, medicines and liquors and for regulating traffic therein, and for other purposes". This measure has had a wholesome effect that can scarcely be realized by those not familiar with the conditions of the past. The American Medical Association, through the Council on Pharmacy and Chemistry, has been a pioneer in its efforts to protect the medical profession and the public against fraud, undesirable secrecy and objectionable advertising in connection with proprietary medicinal articles. Its efforts have been greatly facilitated by the passage and enforcement of the Food and Drugs Act. The coming of age of the Food and Drugs Act should not be allowed to pass without some reference to the dominant figure in the crusade for pure foods and drugs, the late Dr. Harvey Washington Wiley. He was chief chemist of the U. S. Department of Agriculture during the period of the fight for the federal act, and until 1912, "a very mountain among men, a lion among fighters". The movement that he helped to start deserves unqualified commendation. The forces on the fighting line deserve congratulation. There is still much to be accomplished. Vigilance must never be relaxed. (Jour. A. M. A., July 4, 1931, p. 32.)

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#### NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

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## THE EAR, NOSE AND THROAT IN RELATION TO GENERAL DISEASES\*

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It is my purpose to discuss with you today the intimate relationship existing between infections of the ear, nose and throat and those of the general system. In acute infectious diseases, measles, scarlet fever and diphtheria, we have a striking evidence of the part the nose and throat play in the initial attack of these serious maladies. This should cause us no surprise when we recall that the air and food must pass through this region on their way to the digestive tract. At this time it is my wish to speak of infections that are commonly known as focal, which have their origin in diseased processes of the tonsils, paranasal sinuses, middle ear and mastoid, the importance of each being in the order named. The subject of focal infection is an old one but has such an important bearing on so many systemic diseases that confront us that we are justified in bringing it to your attention at this time.

It was in 1914 that Billings and Rosenow centered the attention of our profession on the part that hidden foci play in the causation of such diseases as arthritis, nephritis, pyelitis, endocarditis, myocarditis, neuritis, myositis, pleuritis, iritis, and others. The tonsils, on account of their structure and situation, in my opinion, most frequently harbor foci of infection which harm distant organs, though infected areas around roots of teeth and gums are a close second, yet for obvious reasons are not the subject of discussion at this time.

The lymphatic glands lie at the gateway of the food and air passage, with wide-open

crypts containing culture media suitable for the multiplication of pathogenic organisms. Inside the crypts the thin layer of epithelial lining is poorly protected by connective tissue cells from the lymphoid tissue of the tonsils, affording easy entrance of the infection to the adjacent tissue. If this infection is not destroyed by the leucocytes and lymphocytes of the tonsils, infection gains entrance to the general system either through the lymphatics or the blood stream. How often do we see a swollen and tender tonsillar gland at the angle of the jaw occur early in the appearance of acute infection of the tonsils!

Although the pathogenic organisms may be disposed of in the tonsil or lymphatic glands of the neck, as is usually the case in acute tonsillitis, there is, notwithstanding this, a notable rise of temperature from absorption of the toxins which have filtered through and found entrance to the general circulation. Repeated attacks of acute tonsillitis, particularly in association with measles, scarlet fever and diphtheria, so damage the tissues of the gland that it is doubtful if a perfectly normal condition is ever attained.

Hidden foci may be so situated that no method has been devised by which these areas can be detected. In searching for the focus in areas surrounding suspicious teeth, the x-ray comes to the aid of the dentist, which is unfortunately not the case in the examination of tonsils.

In our efforts to find the focus of infection, it is very important to take an accurate history of the case as to the occurrence of previous attacks of tonsillitis, particularly so if in association with measles, scarlet fever, diphtheria or influenza. However, we must bear in mind that tonsils may harbor a dangerous focus without frequent attacks of tonsillitis. If the patient has

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suffered from one or more attacks of quinsy, this is a point in the history well worth noting. The glands of the neck should be palpated and inquiry made as to the occurrence of tenderness of the tonsillar gland associated with sore throat.

Inspection of the tonsils is important, though no one can give them a clean bill of health, so to speak, from any physical examination of which we are capable. French of New York some years ago claimed that much valuable information could be obtained by transillumination, but this procedure has not found general acceptance. A blind abscess may be present and near the capsule which shows no pus on pressure made on the anterior pillar, but, if pus is expressed, we have evidence of a diseased tonsil. The presence of this type of milky exudate is, in my opinion, of much greater significance than the appearance of thick, cheesy particles so often seen in the mouths of the open crypts of the tonsils. An irregular, jagged appearance of the surface of the gland, giving the tonsil the appearance of a double tonsil, suggests evidence of chronic tonsillitis. If the anterior pillar presents a peculiar injected color we have added evidence of disease of the tonsillar gland.

In reference to size, it should be said that a small tonsil can readily conceal a focus of infection, though a greatly enlarged gland, particularly in adults, gives us positive evidence of chronic tonsillitis.

Although the tonsils may be found diseased, yet we are not safe in saying that they are the only cause of the patient's disability. There may be present at the same time infected teeth, antrum, middle ear, or there may be a distant focus in the prostate, gallbladder, appendix or elsewhere. It is also well to bear in mind that these remote infections may be secondary foci arising from the tonsils. While the tonsils are the chief source of infections arising from the throat, yet we should remember that other lymphoid tissue is present in this region, namely the adenoid, the lingual tonsil and lymphoid follicles on the posterior wall of the pharynx.

In searching for hidden foci of infection, it is important to cooperate with a competent dentist in order that the dental focus may be eradicated before proceeding with the tonsils. We should bear constantly in

mind that the presence of a focus of infection does not necessarily mean that it is harming the individual and should be removed. There are quite enough infected tonsils which are causing systemic disturbances requiring removal without disturbing those which, though infected, do not produce symptoms. However, there is always the danger in such cases that when the individual's resistance is lowered by fatigue, exposure to cold and lack of proper food, an outbreak may occur with grave constitutional symptoms. It has been my experience that those approaching middle life are peculiarly subject to focal symptoms, probably due to lowered general and local resistance.

In my opinion, no method of procedure has yet taken the place of surgical removal of tonsils except in those unusual cases where small tags remain after an incomplete operation, when a simple electrocautery point serves a useful purpose. It may be well at this time to utter a word of caution on the removal of tonsils in the tuberculous, particularly so if there are symptoms and signs of active pulmonary tuberculosis. A goodly number of the tuberculous have inactive lesions of the tonsils which are easily activated in the presence of open wounds and a low tissue resistance incident to the operation. It is possible also for sputum laden with tubercle bacilli to infect an open wound in the throat occurring in tonsillectomy.

Indications for operative interference on the tuberculous should be strong, and if the larynx exhibits a tuberculous complication, surgery should be stayed. Patients come under my care each year having unhealed lesions of the pharynx due to the development of a tuberculous process in the site of the tonsillar wound. Some of these patients have given a history of local pain in the throat prior to the operation, wrongly attributed to diseased tonsils when a careful laryngeal examination would have revealed an active tuberculous lesion of the larynx. To make matters worse, some of these patients had been subjected to an operation under general anesthesia.

It is unusual for children under three years of age to require tonsillectomy, though cases do occur presenting symptoms of great severity, requiring operative interference. Such a case came under my

care a year ago, referred by one of our leading pediatricians. A child fourteen months old was suffering from frequent colds associated with enlarged glands of the neck and inability to gain weight in spite of appropriate feeding. There was also marked anemia, the hemoglobin being only 65. This child, after tonsil and adenoid removal, was, after a short period of time, free of all symptoms of which he had complained and is now in the enjoyment of perfect health.

To show that at times we have very little respect for age, let me say that three patients on whom I have operated have passed their seventieth year. Only two weeks ago it became necessary to remove the tonsils of a medical friend of mine, aged seventy-two, for persistent rheumatic pains which confined him to his bed for a good portion of the time. It has been a gratifying surprise to see how well these patients of older years react from tonsillectomy, a local anesthetic being used in each case. However, no one would think of operating on an elderly person suffering from infirmity of age, nor on young infants, except when indications for operation are strong and positive. As a medical friend of mine recently remarked on asking me to remove his father's tonsils at the age of seventy-one, why should not old people have the benefit of an operation if they stand in need of it?

We are at times disappointed in the results following an operation, particularly so in long standing cases of infectious arthritis. This failure may be due to the presence of secondary foci occurring in the joints, or else other primary foci exist which have not been removed. It is at times difficult to remove every focus of infection in certain regions of the body, particularly so as regards the paranasal sinuses.

Pemberton, an internist of note, is of the opinion that certain toxins are generated and absorbed from the intestinal tract due to imperfect digestion, and at other times the metabolic processes are at fault. He advises in certain cases that the intake of food be somewhat diminished and, in addition to fresh air and sunshine, that massage, sweating and hydrotherapy be used to improve the joint condition. This emphasizes the fact that the patient himself

must be treated after all efforts have been made to remove the offending focus.

Focal infections may at times be harbored in the paranasal sinuses, but in my experience this is not a fruitful source of systemic disturbances in chronic cases. However, we are all familiar with the train of symptoms produced by acute infection of this region, particularly so when extension occurs in the middle ear and mastoid. Marriott, Jeans, Dean Alden and others of St. Louis have described a distinct type of intestinal disturbance in infants associated with fever, vomiting, diarrhea and evidence of dehydration which they regarded as primarily due to infection located in the nose, middle ear and mastoid. They have been so impressed with the causative effect of the infection of the paranasal sinuses and mastoid in producing this train of symptoms that they have advised and practice surgery of this region. Competent physicians working in other sections, notably, Boston, New York and Philadelphia, where the winter climate is not very unlike that of St. Louis, have not noted the type of case described by our confreres in the Middle West.

Marriott, in the April number of the *Southern Medical Journal*, in discussing the subject says: "In the presence of rhinopharyngeal infections, particularly those due to the virulent strains of hemolytic streptococci, some of the organisms may be actually swallowed and survive in the gastro-intestinal tract and cause damage."

In my experience, the ethmoid cells are the ones most frequently involved in the infectious processes during infancy, a condition evidenced by the stoppage of the nose with purulent discharge and often with high temperature. There may be an extension through the eustachian tube to the middle ear and mastoid. Direct extension may spread from this region to the orbit, forming an orbital abscess, a less frequent though more serious complication. Fortunately, we have in the various preparations of ephedrin, a remedy which when applied to the nasal mucosa serves to shrink the tissues, facilitating ventilation and drainage. A 10% argyrol solution applied in packs to the upper regions of the nose is highly efficacious in clearing up the infection, and in this way avoiding surgical intervention. A mere dropping of argyrol



into the nose has, in my experience, been of very little benefit in these cases. We should remember that chronic sinus in adults often has its beginning in infancy and childhood, stressing the importance of due attention to the early infections in this region.

There are a certain number of pulmonary infections such as chronic bronchitis and bronchiectasis which simulate tuberculosis, and are distinguished only by a careful x-ray examination. These cases are frequently due to an infection of the paranasal sinuses, particularly the antra, and improvement can only follow ridding the patient of this nasal infection.

It is a common observation that colds in the head are soon followed by attacks of bronchitis. Bronchial asthma may also be caused by infection of the paranasal sinuses, but surgery of this region, except drainage and ventilation of the maxillary antrum, is not followed by brilliant results. The close association of sinus disease with bronchiectasis and asthma was first brought to our attention by Mullin in 1921.

To return for a moment to infection of the middle ear in children, it should be said that systemic symptoms arising from this region are out of all proportion to the extent of the lesion. Not only is there extreme restlessness with high temperature, but convulsions may occur. This brings me to the point of saying that every infant with obscure fever should have his ears examined and the drum membrane incised when indicated. On account of the frequent association of middle ear disease with intestinal disturbances, particularly in summer diarrhea, infants so affected should have their drum membranes carefully inspected and incised when indicated. Drainage of the infection of the middle ear is usually followed by improvement in the general condition of the patient and in this way a mastoid operation may be avoided.

It has only been possible to discuss certain phases of systemic disturbances arising from foci in the ear, nose and throat, for the subject is too large a one to cover in its entirety at this time.

Diphtheria is a disease of striking interest to both the general practitioner and the specialist for the reason that the lesions, though usually confined to the nose and throat, produce systemic symptoms which

are general in character and often severe. The specific toxins attack with peculiar force the muscle fibres of the heart, the kidney and the nervous system. In spite of the general use of antitoxins as a curative measure, this disease still claims many victims, usually for the reason that the physician is summoned late in the illness. The mortality from this disease in New York City has been greatly reduced by the general use of toxin-antitoxin among school children.

Without entering into a full discussion of the treatment of diphtheria, a matter with which you are quite familiar, let me say that according to Park a sufficient initial dose of antitoxin should be given in order that a second one may not be required. To have to repeat the dose, Park says, is an admission that the initial dose was too small. It is usually preferable to administer the antitoxin intramuscularly on account of its more rapid absorption than through the subcutaneous tissue, though in cases of great severity the intravenous method is to be preferred.

Should symptoms of laryngeal obstruction appear, intubation should be performed before grave symptoms appear with cardiac weakness. It is a fact that in laryngeal cases the patient may be suffering more from physical obstruction to respiration than from symptoms of toxemia. Tracheotomy should at times be performed when the intubation tube is persistently coughed up, or when no one is available skilled in the insertion of the O'Dwyer tube. It has been observed that general practitioners and pediatricians have in notable cases acquired unusual skill in the art of intubation.

I wish next to call your attention to the close relationship existing between laryngeal tuberculosis and the pulmonary condition. Though the laryngeal lesion is practically always secondary to the lesion in the chest, yet the symptoms in this region are often so severe as to dominate the picture. It has often been wrongly said that the larynx would improve as the pulmonary condition advances toward recovery, though as a matter of fact the reverse is more often the truth that the improvement of the pulmonary condition is dependent on the lesion in larynx, particularly so if pain is present which interferes with the taking of food.

Nutrition cannot be sustained in the presence of dysphagia, though the pain be slight. There is no drug save an opiate in some form which is successful in coping with the pain of laryngeal tuberculosis, and this drug, we know, interferes markedly with digestion. The painful areas of the larynx are the lesions of the epiglottis, the aryteno-epiglottic folds and the arytenoids themselves, this being the region where food touches in the act of swallowing.

Tuberculosis attacking this region has no particular influence on the voice, so hoarseness is not a feature. Lesions within the larynx proper, attacking the vocal cords, the ventricular bands, the ventricles and the posterior commissure, do affect the voice and huskiness, soon followed by hoarseness, is an early symptom. Before the appearance of this symptom, the patient may complain of a dryness and tickling in the larynx often accompanied by an increase in coughing.

As our profession has stressed for many years the importance of an early diagnosis of pulmonary tuberculosis when the disease is most amenable to treatment, so we, in our specialty, wish to urge an early determination of laryngeal tuberculosis in order that appropriate treatment may be instituted before the lesion has advanced beyond the hope of repair. This can only be attained by making routine laryngeal examinations of all patients suffering from pulmonary tuberculosis. Rarely, cases of laryngeal tuberculosis are observed where neither pain nor hoarseness is present, and these are the cases which frequently respond to vocal rest alone.

Two decades or more ago a tuberculous individual with a laryngeal complication was classed among the hopeless, and it is only since the use of the electrocautery in these cases that the prognosis has entirely changed. This complication is still regarded as a serious one, though not in the same way as formerly. Unfortunately, the cautery is not suitable in all cases, Sir Sinclair Thompson of London using it only with about 23 per cent of his cases. In my experience at least 50 per cent require the action of the cautery. There are certain mild cases characterized by very slight huskiness or hoarseness and where there is only slight redness of the larynx, one cord usually more than the other, that only require

vocal rest for the larynx. However, if a localized area of infiltration or ulceration should appear, the cautery should be promptly applied.

It is my practice to compromise with patients, allow them to communicate by lip whispers rather than require the use of pad and pencil. Absolute silence in some respects is preferable, yet there are cases where it produces great mental depression. As I have often remarked, some cases are too mild to require the application of the cautery, while in others the lesion is too far advanced and too extensive to justify its use.

The application of the cautery is not only effective in producing a cure for the disease, but serves to relieve the pain which is often so severe as to interfere with the taking of food, thus interfering with the nutrition of the patient. Another very important and gratifying result of the cautery is the restoration of the voice in those individuals who have suffered from lesions within the larynx where the vocal apparatus is involved. In conclusion, I would urge that every patient suffering from laryngeal tuberculosis should have his larynx examined routinely in order that treatment may be instituted before the lesion has advanced beyond the hope of repair.

I wish to express my great appreciation for the opportunity of appearing before this Association of which I was at one time a member. I hope during my stay with you to renew old friendships and also to make new ones.

#### DISCUSSION

*Dr. Porter Stiles, Birmingham*—In considering the question of focal infection, especially from the curative standpoint, it is important to differentiate conditions which are degenerative from those which are inflammatory. It is unreasonable to believe that removing a focus of infection, even though it be the original and underlying cause of the degeneration, can restore to normal a tissue that has undergone a permanent change. All we can hope for in conditions of this sort is to recognize infective foci before irreparable damage has been done and when the secondary condition is purely inflammatory. All of which means that we should consider the removal of foci of infection from the prophylactic standpoint instead of waiting for the development of metastatic lesions. It is well to remember, too, that even when dealing with purely inflammatory conditions, one should be careful not to promise too much. The presence of infected tonsils does not necessarily mean that they are the cause of the symptoms complained of.



There is no way of ascertaining for certain that such is the case. About all that the conscientious surgeon can say is that the tonsils could cause the condition, probably do cause it, and not to remove them is to leave undone an important step in the treatment. In other words, when considering the question of tonsillectomy for focal infection, one should not be so conservative as to fail to give the patient the benefit of every reasonable effort, nor so radical as to bring the operation into disrepute by over-exploitation.

## THE MECHANISM OF THE PRODUCTION AND THE TREATMENT OF SHOCK\*

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A great deal of confusion has arisen from the use of the term "shock". Such is always the case when one is dealing with a condition the nature of which is not thoroughly understood. A great part of the difficulty is probably due to the fact that observers have attempted to define by this term most of the conditions in which there is a low blood pressure. Until the condition is better understood, it would probably be advisable to add always a term which describes the initiating agent, such as, shock following trauma to an extremity, shock following burns, or shock following trauma to the brain.

The type of shock with which surgeons are most frequently encountered has been termed "secondary shock" in recent years. This was adopted in order to differentiate it from "primary shock" and "collapse". "Primary shock" may be described as a condition in which a low blood pressure follows immediately after receipt of an injury, whereas a definite interval of time, usually several hours, separates the injury and the marked decline in blood pressure in "secondary shock". It is this latter condition with which we are concerned in this paper.

There is practically universal agreement at the present time that shock due to all causes is associated with a diminution in the volume of circulating blood. However, there are a great many different theories as to the agencies which are responsible for this decrease. Among these may be mentioned the following theories: (1) vasomotor exhaustion, (2) inhibition, (3) fat

embolism, (4) suprarenal hyperactivity, (5) suprarenal hypo-activity, (6) acidosis, (7) acapnia, and (8) toxemia. The theory with most adherents in recent years is that which states that shock following injury is due to the action of toxins. During the recent war, commissions were appointed in several countries to study surgical shock and allied conditions. It was from these studies that the toxemia theory received most of its support. Cannon and Bayliss performed experiments in which one of the posterior extremities of cats was traumatized with a hammer. This method of producing injury was chosen because it produced results strikingly similar to those which were seen frequently in wounded soldiers. It had the additional advantage that the opposite non-traumatized extremity could be used as a control when the effects of various procedures were studied. Cannon and Bayliss struck one thigh of the anesthetized cat with a blunt wedge-shaped hammer. After an hour or more in their experiments the blood pressure fell to 80 mms. Hg. or less. After a sustained low blood pressure had resulted, they amputated the two hind legs by symmetrical cuts and determined the difference in the weights in the two. This difference indicated that there was not a sufficient loss of blood into the traumatized area to account for the decline in the blood pressure. That the fall in blood pressure was not due to any general effect of the trauma on the circulation, brought about by nervous agencies, was shown by section of the cord in the upper lumbar region in some of their experiments. The femur was not broken in most of the experiments and fat embolism seemed very unlikely. They concluded that the most likely cause for the decline in the blood pressure was the production of toxins at the site of injury. It was believed by most of the workers that this toxin was histamine or some histamine-like substance.

Some experiments which we had performed previously indicated that the cause for the decline in the blood pressure after trauma to an extremity was not the effects of a histamine-like substance. Hence, it was decided to repeat the experiments of Cannon and Bayliss. Dogs were used in these and all experiments reported in this paper. They were all profoundly anesthe-

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tized by sodium barbital or by morphine and ether and they were killed at the completion of the experiments.

One of the posterior extremities of dogs was traumatized severely by striking it with a hammer. Eight experiments of this type were performed. The length of time which elapsed between the initiation of the trauma and the reduction of the blood pressure to a low level varied from one hour and fifteen minutes to six hours and twenty-eight minutes. It was noticed that the hemorrhage took place not only into the area directly traumatized but also into the loose tissues of the groin and flank. This indicated that Cannon and Bayliss had not taken into consideration all of the blood that was lost in their method of amputation across the upper thighs. The method of determining the difference in weight of the traumatized and non-traumatized parts in the present experiments was as follows. The site at which the amputations were performed was in the midabdominal region. After making a midline abdominal incision extending from the xyphoid process to the symphysis pubis, the terminal aorta and vena cava were divided between ligatures. The symphysis pubis was divided with a saw. The bladder and rectum were then removed. The iliac vessels on each side were clamped. Transverse abdominal incisions in the midabdominal region at the same levels on the two sides were then made, the spinal column was cut transversely with a saw and the lower part of the body was removed from the upper. The lower part of the body was then divided into halves by sawing longitudinally through the midline of the spinal column. The tail was discarded and the difference in the weights of the two parts was determined. The average difference in the weights of the two parts in the eight experiments expressed in percentages of the entire weight of the animals equalled 5.2 percent. The fluid in the traumatized area was analyzed and it was found to resemble very closely the blood in its composition, but the ratio of plasma to red blood cells was somewhat increased.

The question then arose as to whether or not the loss of this amount of blood alone could account for the decline in the blood pressure. This was determined by the graded removal of blood from the femoral

arteries of six dogs. At one hour intervals whole blood which equalled one-half of one per cent of the body weight was withdrawn. This procedure was continued until death resulted and the average amount removed in the six experiments equalled 5.1 percent of the body weight. A comparison of the results of these experiments with those in which one extremity was traumatized indicates the cause of death in the latter to be the loss of blood into the injured area.

The results were confirmed in other experiments in which the procedure was altered. In one group of experiments, the femoral artery was exposed in the upper thigh and about 6 cms. of its length was freed from the surrounding tissues. A tourniquet was then placed tightly around the upper thigh constricting all of the structures except the femoral artery which was left outside. This was done in order to prevent the absorption of products which might serve as depressants to the blood pressure. The extremity distal to the tourniquet was then traumatized with a hammer. The impression was gained that less trauma was necessary for the production of a low blood pressure in these experiments than in those in which no tourniquet was applied. After the blood pressure had reached a low level, the weights of the two extremities were compared and the difference was found to be sufficient to account for the decline in the blood pressure. In another group of experiments, the effects of simply placing a tourniquet around an extremity which constricted all structures except the femoral artery were studied. No trauma was instituted in these experiments and no marked decline in the blood pressure resulted. However, the placing of tourniquets around both posterior extremities in the manner described was followed by a decline in the blood pressure to a low level.

No evidence that a histamine-like substance was responsible for the decline in blood pressure was found in the experiments described thus far in this paper, but they were not of sufficient duration to rule out the possible effects of protein decomposition products that are slower in their action. Hence, experiments were performed in which the trauma to the extremity was less severe and in which a longer time interval elapsed between the production of the



injury and the decline of the blood pressure to a low level. The length of such experiments was limited by the fact that the amount of anesthetic that was used would eventually cause the death of the animals. Ten experiments of this type were performed. The average duration of these experiments was thirty-two hours and sixteen minutes and the average mean arterial blood pressure at the end was 33 mms. Hg. The average increase in hemoglobin was 27 percent. The average difference in the weights of the traumatized and non-traumatized extremities amounted to 3.66 percent of the body weight. The fluid that escaped into the injured area was studied and it was found to have almost exactly the same composition as the blood plasma. It is of importance that the protein content of the two was almost identical because protein is the constituent that maintains to a large degree the osmotic pressure in the blood vessels. Since the fluid that escaped into the injured area had the same composition as blood plasma, in experiments on five dogs, the loss of plasma that produces death was determined. At six hour intervals, an amount of blood equal to one percent of the body weight was removed from the femoral artery. This was defibrinated and centrifuged and the red blood cells plus enough plasma to equal one-half of the volume that had been removed were re-introduced. In this manner, blood plasma equal to one-half of one percent of the body weight was removed every six hours. The average duration of these experiments was twenty-eight hours and twenty-four minutes and the average removal that produced death was 2.6 percent of the body weight. The average alteration in hemoglobin was an increase of twenty-four percent. These findings indicated that the loss of plasma into the injured area in the experiments in which one extremity was mildly traumatized was sufficient to account for the decline in the blood pressure.

One of the most frequently used methods of producing shock experimentally consists of traumatizing the intestines. In experiments on twelve dogs, this was done by passing the intestines gently between the fingers. This was continued until a sustained low blood pressure resulted. A copious weeping of fluid followed the exposure and

handling of the intestines. The fluid had approximately the same composition as the blood plasma. The amount of fluid that was lost from the blood stream was determined roughly in the following manner. Precautions were taken to avoid against the loss of urine and feces. The weight of the water that was lost in the expired air was determined and corrected for. The difference in the weights of the dog at the beginning and end of the experiment was determined. This figure plus the difference in the weight of the intestines of the traumatized dog and of a normal dog of the same weight gave roughly the amount of fluid that was lost from the volume of circulating blood. The average loss as computed in the twelve experiments by this method equalled 3.98 percent of the body weight and the average mean arterial pressure at their completion was 48 mms. Hg. The average increase in hemoglobin was 38 percent and the average duration of the experiments was five hours. In order to try to determine whether or not the loss of plasma was responsible for the death of these animals, experiments were performed in which blood plasma which amounted to one-half of one percent of the body weight was removed at one hour intervals until death resulted. Eight experiments were performed. The average duration of these experiments was six hours and thirty-four minutes and the average increase in hemoglobin was 34 percent. The average amount of the removal of fluid that produced death expressed in percentages of the body weight was 3.20 percent plasma and 0.85 percent whole blood. It is necessary to express it in terms of plasma and whole blood since in some instances the animal died before the red cells could be re-injected following the last removal of blood. These results indicate that the loss of fluid from and into the traumatized intestines was responsible for the decline in the blood pressure.

Another type of injury that was studied was that due to burns. In these as in all other experiments, the animals were deeply narcotized and gave no evidence of pain. The burns were produced by the use of heated metal cauterys. Dogs do not blister when burned. The skin becomes hard and leather-like, presenting an appearance quite similar to that exhibited by burned

skin following the application of tannic acid. A large amount of clear fluid accumulates in the subcutaneous tissues at the site of the burn. This fluid was studied and was found to have approximately the same composition as the plasma of the blood. The amount of the fluid that was lost in eighteen experiments was determined in the following manner. The entire body of the animal was shaved and the midline was marked with ink both anteriorly and posteriorly. The greater part of one half of the body was then touched with the heated cautery. After an average time interval of fourteen hours and thirty-three minutes the blood pressure had declined to an average mean of 28 mms. Hg. At this time, the difference in the weights of the two halves of the body was determined. Incisions were made anteriorly and posteriorly along the lines that had been made at the beginning of the experiments. The sternum and the symphysis pubis were divided in the midline with a saw. All of the intrathoracic and intra-abdominal organs were removed. The neck was cut across and the head was discarded. Then turning to the back of the animal, by the use of a saw the ribs and the pelvic bones were divided on each side just at their attachments to the vertebral column. Discarding the vertebral column and the tail, the two halves of the body were then weighed and the difference in weight determined. In all instances the burned side was the heavier. The average difference in the eighteen experiments amounted to 3.34 percent of the body weight. This figure is approximately the mean of those obtained in the experiments in which death was produced by the gradual removal of blood plasma at one hour intervals and those in which plasma was removed at six hour intervals, and the average duration of the experiments on burns is intermediate between those in which plasma was removed at one hour and at six hour intervals. In the experiments on burns, the average increase in hemoglobin was 48 percent which again denotes that a great deal of fluid was lost from the blood. The results indicate that the cause of death in these experiments was the loss of plasma from the blood stream into the subcutaneous tissues of the burned area. Evidence of the action of toxic substances was not found in these ex-

periments, but they were of short duration and do not by any means rule out the late effects of toxins. They are interpreted as meaning that deaths which occur within twenty-four hours following a burn are usually due to a diminution in the blood volume because of the loss of plasma. Deaths which occur more than two or three days following burns are probably due to the absorption of toxins unless there is some complication such as pneumonia. It seems possible that the early benefit which is derived from the use of tannic acid, adrenalin and similar remedies in burns is due to the fact that the escape of fluid from the injured area is retarded rather than that the absorption of toxins is prevented. The late benefit is probably due to the lessening of the absorptions of toxins.

If the present experiments are correct in indicating that the local loss of fluid from the blood stream at the site of injury is responsible for the decrease in blood volume and blood pressure, a more hopeful attitude may be adopted towards the treatment than if the condition were due to obscure toxins that were exerting a general bodily effect. The giving of vasoconstrictor drugs produces a temporary rise in the blood pressure but it is practically never sustained. Studies were performed on shock following hemorrhage and ephedrin was found to produce a more prolonged increase in the blood pressure and in the output of the heart than the other drugs commonly used. Almost certainly its use is at times harmful. It is well known that a normal animal can be placed in a state of shock by the frequent introduction of large amounts of adrenalin. But more important still is the fact that the primary aim in view is not a high blood pressure but an increase in the volume of circulating blood. When vasoconstriction is produced without increasing the blood volume, the amount of blood reaching the organs is decreased rather than increased and this probably results in further damage. The ideal method of treatment is to introduce some fluid into the blood stream that will cause an increase in both the blood volume and the blood pressure.

There is universal agreement that the best method of treating shock due to hemorrhage is by the transfusion of whole blood. In this condition there is a dilution of the red blood cells due to the passage of



fluid from the tissue spaces into the blood stream. Unfortunately a suitable donor is not always available and substitutes for blood have to be used. The present experiments indicate that the ideal method of treating shock due to burns and other injuries which are associated with a marked loss of the plasma of the blood and a great increase in the concentration of the red blood cells would be by the use of blood plasma without the red blood cells. The latter are not needed because they are already present in too high a concentration. It is dangerous to give large amounts of plasma obtained from the animal to man because of the frequency of severe reactions due to foreign proteins. The obtaining of large amounts of plasma from the human is expensive and it cannot be preserved with perfect safety. Hence, very very frequently it is necessary to use some substitute for blood. The one of these that most nearly possesses the properties of blood is gum acacia because it has approximately the same viscosity when prepared in six percent solution and it is able to exert approximately the same osmotic pressure. Its use is not without danger as a few fatalities have been reported following its use. Salt and glucose solutions usually do not exert a lasting effect because they pass rather quickly from the blood stream.

In association with Dr. Joe Beard, the effects of the intravenous injections of isotonic and hypertonic solutions of salt and glucose are being investigated. The administration of large quantities of these solutions to dogs with normal blood pressure causes practically no alteration in the volume of blood and very little change in the content of protein in the blood plasma. As has been stated previously, special emphasis is placed on the protein content because it is the substance that draws fluid into the blood stream and holds it there and that is what one is trying to accomplish in the treatment of shock. The findings are quite different when these fluids are given to dogs with a low blood pressure whether it be due to trauma or to too deep narcosis. Under these conditions, the injected fluid leaves the blood stream and a great deal of protein is taken with it. This, of course decreases the osmotic pressure and I think it explains the difficulty which is universally encountered in treating shock.

I am greatly indebted to my co-workers, Dr. Joe Beard and Dr. G. S. Johnson, for allowing me to refer to the experiments performed in association with them.

#### DISCUSSION

*Dr. Clyde Brooks, Tuscaloosa*—I have been very much interested in Dr. Blalock's paper and am glad to note that progress is being made on the subject of shock. I have not paid the subject much attention since the late war. During the World War I was not on the Shock Commission nor was I engaged in doing research work on poisonous gas, but at the same time I was interested in shock and went over in my mind some of the things that have since claimed the attention of the profession.

The first man to use the word shock, I think, was an Englishman named Marshall Hall, about 1817. He took a frog and bending his head back he transected the spinal cord at the foramen magnum and the frog for a while lost his diastolic movements. In other words, the frog was paralyzed. Then, in a few minutes, the frog set up and looked like a normal frog. Apparently his intelligence remained about the same. That was called shock.

I agree with the speaker that the definition of shock is of great importance because there are so many kinds of shock. We should not use the term without qualification.

For example, there is such a thing as psychic shock. I am told that in New Zealand there are tribes of primitive people whose chief keeps a bone around his office to assist him in detecting criminals. When they bring in a culprit who is charged with crime, the chief points the bone at him, and if the man is guilty he goes out and sickens and dies some time afterwards. That must be due to psychic shock.

Another kind of shock: A man is walking a'long the street and is hit just over the solar plexus with the end of a carriage pole. Shock follows. Another case: During the time I was in the University of Chicago the sidewalk by Kent Hall blew up. A great hole resulted into which a fellow fell. We pulled him out as soon as we could and asked him if he was hurt. He said, "No." He went home and in a few hours afterwards collapsed and showed all the signs of shock. So, that is another type.

Now, there are various things that can happen that will depress the blood pressure or depress the body. In other words, one person has defined shock as a rude unhinging of the machinery of life. It seems to me that that is a pretty good definition. There is no one explanation of the mechanics of all the different kinds of shocks. The paper tonight is devoted to a special kind of shock, secondary shock found in surgery or in traumatism or in wounds. This is very similar to the shock produced by hemorrhage.

You have heard various theories pronounced and there may be some merit in many of them but certainly some of them have been disproved as being a major cause of this kind of shock. I am one of those who believe that we are pointing in the right direction when we look towards some toxic substance that is produced. I have always thought that I would like to do some research

work on this subject and see if there wasn't some protein developed by the traumatism. In other words, in the case of injury, there is crushing of the tissue, mechanical grinding up of the tissue, letting out of blood and other fluids, and these are absorbed. Not only that, but they are digested by the autolytic ferments that are there, and in the case of burns we have the added influence of heat, splitting up of the protein, allowing it to be further digested. The length of the period we notice in shock is another indication that a protein might be responsible. Several hours may elapse before shock manifests itself. Such is what we would expect from the injection of a foreign protein. Take the animal's own proteins and grind them up and digest them and reinject them and they are as a foreign protein.

Our essayist has called attention to a very important point and that is that the mere loss of fluid is sufficient to account for some of these phenomena. The concentration of blood has been emphasized, and the fact that in traumatism there is a loss of fluid from the blood stream. This, in itself, is depressing to the blood pressure.

Now, here is the point that goes back to the definition of shock, this rude, unhinging of the machinery of life. There is something wrong with the machinery of the body or else the patient wouldn't lose his breath. He can drink a little water and will soon come back to normal. There are so many functions of the body that run along a normal level, the blood pressure, temperature of the blood, amount of hemoglobin, and this normal level has been disturbed in the case of shock. Something has happened to break up the machinery.

Dr. Blalock has been doing some excellent work on shock. It seems to me he is going about it in the best way.

*Dr. Adrian Taylor, Birmingham*—This essay is a splendid refutation of the criticism of the great surgeon, Professor William Halsted, who said, I believe, that the loss of blood was the greatest cause of the thing we know as surgical shock. The essayist has shown by his experiment that of all the obscure factors that enter into the picture the loss of blood constituents is most important. He has pointed out further that the restitution of whole blood constitutes the best treatment of shock.

As a practical matter, I would like to mention the use of blood saved from the patient during operation. As one watches that master surgical technician, Dr. Harvey Cushing, he will note that he conserves by suction all the blood lost in the long drawn out brain operation and if shock results the blood, properly citrated to prevent clotting, is administered to the patient.

We are greatly indebted to Dr. Blalock for elucidating some of the problems of this great clinical question, and he has brought suggestions to us which I feel sure will be of great value to us in our daily work.

*Dr. W. G. Harrison, Birmingham*—The time is so limited I shall not throw this paper open for general discussion but before proceeding I want to add a word, not particularly about the subject nor the essayist. Every four years we have a discussion concerning the use of animals in ex-

periments of this character.

In the series of experiments just explained to us, less than one hundred dogs were used. The work that has been done, and which we have heard about tonight, is of great importance and will mean the saving by the transfusion of blood of the lives of hundreds of people in every state every year. I wish we could get this to misguided enthusiasts who are opposed to animal experimentation. There was no cruelty to these dogs. The way the dogs are treated is exactly the way we treat children when we are operating on them. The same sort of anesthetic is used and the same general handling is resorted to.

We are asking questions of nature and nature seems to be answering them. I predict that in a few years we shall have a standardized method, whether it be giving the patient's own blood or the blood of the patient's own father or mother, which will be satisfactory.

## THE HEART IN TOXIC GOITER\*

H. P. SHUGERMAN, M. D.,  
Birmingham

It is not my purpose in this paper to determine whether or not the syndrome, hyperthyroidism associated with adenomatous goiter, is a disease entirely separate and distinct from that of exophthalmic goiter. I leave that worn controversy to the academicians. I accept the belief that the effect on the heart is the same in both groups.

Regardless of the type of goiter producing it, hyperthyroidism, if allowed to act sufficiently long, inevitably produces cardiac symptoms and eventually serious heart damage. In the clinical history of the patient with hyperthyroidism, the circulatory system plays an extraordinarily important part; ultimately it determines the course, prognosis, and treatment of the disease. Failure to appreciate the effect of thyroid toxicity upon the heart will surely lead to grief and disaster.

We still lack complete understanding of the factors bringing about the characteristic circulatory phenomena in hyperthyroidism. Scientific inquiry thus far has failed to bring definite knowledge; only conjecture is possible.

The belief still held by some, that thyroid toxicity produces a specific poison with selective destructive action on the heart, can no longer be accepted. Neither postmortem study nor clinical observation supports such an opinion. Lahey's conclu-

\*Read before the Association in annual session, Birmingham, April 23, 1931.



sion, "thyroidism in itself does not cause heart disease, and there is no heart state which can be designated as a true thyroid heart", indicates the prevailing belief.

The laboratory has thus far failed to establish the existence of a definite cardiac pathology in hyperthyroidism. Descriptions of anatomical changes found in patients dying from thyroid heart disease universally lack evidence of permanent heart changes. Fatty infiltration of the heart muscle cells and small areas of fibrosis, with perivascular round cells scattered through the heart muscles, have been found but these changes have not been found in all cases; moreover, we know that these same changes occur in a number of other conditions.

More positive and more convincing information as to the cause of cardiac failure in hyperthyroidism is offered by bedside studies. Decidedly impressive, and reasonably conclusive, are the observations made at the Lahey Clinic on a group of patients to which Lahey has applied the term "thyrocardiacs." This group was made up of 101 patients. Seemingly, each of them had reached a helpless degree of cardiac failure owing to hyperthyroidism. And yet, after operation, 95 were returned to full former activity. Such results justify the conclusion that even the most severe intoxication from hyperthyroidism need not produce permanent functional disorder.

Undamaged hearts in young individuals bear thyroid toxemia exceedingly well. In such individuals, hyperthyroidism may reach a degree in which the pulse becomes uncountable, and yet, despite the severity of the disease, a severity which may continue for a considerable period, a period which may terminate even in death, there is never—not even up to death—any cardiac decompensation. It would seem, therefore, that unless there is a co-existing cardiovascular disease the functional capacity of the cardiovascular apparatus is quite normal. Since the majority of hyperthyroidism cases showing auricular fibrillation can be restored by successful surgical treatment to normal rhythm, and caused to remain normal without any evidence of myocardial complication, we are justified in assuming that the thyroid toxin does not produce myocardial changes. It is of interest to note that auricular fibrillation and

cardiac decompensation, cardiac states so often associated with hyperthyroidism, occur commonly in patients of middle age; even more commonly in patients past middle age; very rarely in young individuals. It is at least suggestive that cardiac failure in hyperthyroidism may be due to preexisting cardiac damage. When these facts are taken into consideration, it becomes fairly clear that the effect of thyroxin on the heart is temporary, and that no changes are produced which may not disappear when hyperthyroidism disappears.

There is an alternate explanation. It declares that the major effect of hyperthyroidism on the heart is constant mechanical strain with ultimate heart muscle exhaustion. The strain is, as Andrus states, "essentially that of an increased metabolic rate upon a muscular organ". Studies of the metabolism of the myocardium have shown it to differ only quantitatively from that of other muscles, the myocardial oxygen consumption rising in proportion to the work it performs. The degree of heart muscle exhaustion brought about by such an extrinsic strain can be surmised when one estimates the amount of work done by the heart in maintaining an adequate oxygen supply to the entire organism, an organism whose rate of oxygen consumption is already considerably raised.

The diagnostic problem is to differentiate between thyroid toxicity, cardiovascular disease, and neurasthenia. By far the largest number of undiscovered thyrotoxic cases have been previously treated for heart disease. It is well to remember, however, that a patient may have cardiac symptoms and goiter, and the goiter be merely incidental, not at all responsible for the cardiac symptoms. One must think of the neuro-circulatory asthenia type with a small, firm, uniform goiter; one must think of patients over fifty with systolic pressures of 200 and with small, firm, nodular or uniform goiters—in reality cases of essential hypertension with or without myocardial failure or renal disease; one must think of patients in middle age or past middle age with nodular nontoxic goiter and serious heart trouble—in reality cases of severe chronic myocarditis.

Of all the cardinal signs, tachycardia is the most frequent, the most constant. Pulse rates of 150 are not uncommon; they

may go to 250. Even in rest, even in sleep, the heart is distinctly rapid. Not only is the heart beat rapid, it is also markedly forceful.

It is the rule in thyrotoxicosis, when the rhythm is regular, to find the systolic blood pressure elevated, the diastolic lowered, and the pulse pressure tending toward half the systolic pressure. Opinions differ as to whether thyroid toxicity *per se* tends to cause elevation of both systolic and diastolic pressures, but there is agreement that it does not lead to permanent vascular hypertension. Cessation of thyroid toxicity following operative treatment brings about a lower systolic and a higher diastolic pressure in approximately fifty per cent of cases, while twenty per cent will show a rise in both pressures: and it has been suggested that the smaller group was complicated by true hypertension, that the vasodilation associated with thyroid toxicity actually lowered both pressures.

Systolic murmurs are common in hyperthyroidism. Diastolic murmurs usually indicate coincident disease. "Gallop rhythm" is not unusual, but does not necessarily mean cardiac changes.

Heart pain is not of rare occurrence, and is not necessarily an ill omen. The incidence of true angina pectoris—the Heberden type—is probably higher than a perusal of the literature would indicate. It is easy to overlook a mild angina pectoris in the presence of a stormy thyrotoxicosis, and severe angina pectoris will readily obscure a mild thyrotoxicosis. Haynes and Kempter have studied 33 *bona fide* cases of angina pectoris associated with hyperthyroidism; they found that the prognosis is very grave if the thyroid toxicity is not controlled; they found that in the majority of cases definite improvement follows partial thyroidectomy.

One would expect to find some cardiac enlargement as the result of excessive activity in hyperthyroidism, yet it is remarkable that even in long-standing cases of high-degree toxicity the heart is usually found to be of normal size. Groups displaying cardiac enlargement would in most instances fall in the 4th or 5th decade of life, and show the existence of independent cardiovascular disease.

We conclude, therefore, that in most cases the heart tolerates the strain of thyroid toxicity exceedingly well, that a tox-

emia of high degree can continue for a long time without developing serious cardiac complications. But there are exceptions. Now and then thyroid toxicity picks out certain individuals for definite heart damage. In these individuals, if the toxicity is not checked, the more dramatic cardiac states, auricular fibrillation and congestive heart failure, will sooner or later make their appearance.

Auricular fibrillation presents a striking form of disturbed function, a form easily recognized. It may come at any time during thyroid toxicity, first in transient attacks, then as a more constant factor. Later it tends to become more established. The attack is often precipitated by exacerbation of the toxic symptoms, and consequently may be looked for during the "thyroid storm" which follows operative procedure. Improvement in the toxic symptoms is followed by the heart's return to normal rhythm.

Auricular fibrillation is present in about twenty per cent of all toxic cases, its percentage incidence increasing with each decade of life. In Lahey's series of 372 unselected definitely toxic cases, it was absent in all cases under 20 years of age, while it was present in 85.7 per cent of all cases over 60 years of age. It is found in approximately 85 per cent of cases of congestive heart failure associated with hyperthyroidism. Two-thirds of the toxic thyroid cases associated with rheumatic heart disease showed this form of arrhythmia. It would seem, therefore, that the incidence depends largely upon the duration of the toxicity, upon the severity of the toxicity, and upon coincident heart damage.

Auricular fibrillation readily responds to treatment. It is rare indeed for it to continue after relief of thyroid toxicity, though the established form may occasionally persist after thyroidectomy, even after digitalis and quinidine. With the knowledge that thyroid toxic states tend to cause auricular fibrillation in certain individuals, particularly in those with previously damaged hearts, it is decidedly unwise to permit this complication to go unchecked, and thus add another and serious handicap to an already over-burdened circulation.

Congestive heart failure is the most serious complication of hyperthyroidism; fortunately it is also the rarest. There is a



small group of "thyrocardiacs" in whom the occurrence of heart failure is merely a further step in the progress of a co-existing severe heart disease; but in the larger group this complication is grafted upon a relatively sound heart, and the strain of thyroid toxicity can be considered the prime factor in the heart failure.

Congestive heart failure is more frequent in patients over 40 years of age. When it occurs in young individuals, it is almost always associated with pre-existing rheumatic or more rarely, luetic heart disease. When it occurs with normal rhythm, independent cardiovascular disease can likewise be demonstrated.

The diagnosis of congestive heart failure *per se* usually is easy. The symptoms and signs developing from congestion in the pulmonary or systemic veins do not as a rule escape recognition. But the diagnosis of thyroid toxicity underlying congestive heart failure is often difficult. It is particularly difficult when the cardiac symptoms dominate the clinical picture and completely overshadow the other toxic symptoms. The majority of patients will give a history of gross congestive failure from which they cannot be relieved by rest in bed, digitalis, and the usual method of therapy, and yet they manage to live for months, even years. Fluctuating attacks of cardiac irregularity can best be explained by fluctuations in thyroid toxicity. And yet, one should, of course, look for other toxic symptoms referable to the thyroid gland. Exophthalmos and staring, loss of weight, weight fluctuation and chronic emaciation are indicative, certainly suggestive, of thyroid toxicity. A basal metabolism estimation has more of a negative value. Patients with congestive heart failure, and without thyroid toxicity, tend to have elevated basal metabolism with frequent readings of plus fifty.

Lahey calls attention to an interesting group of individuals, occasionally of middle life, but more often in later life, in whom hyperthyroidism is manifested by a distinct picture of apathy in contrast to the usual over-activation. This type of reaction in connection with cardiac decompensation, Lahey considers the more dangerous: it occurs in individuals with less capable organisms; it may be interpreted as an index of

mild toxicity, this leading to a false sense of complacency.

The search for thyroid toxicity as a possible cause of congestive heart failure is often laborious, but it will lead to the only successful therapy—subtotal thyroidectomy.

The treatment of cardiovascular disturbances developing in hyperthyroidism is surgical. Other measures generally adopted in the scheme of therapy are valuable adjuncts, but the ultimate relief can come only through surgery. Three drugs invite discussion. Iodine is indispensable. Its advent in the treatment of thyroid gland disease was momentous. Its use as a pre-operative measure, and during acute crisis before or after operation, is of inestimable value. Since myocardial failure in hyperthyroidism is often associated with heightened toxemia, the use of iodine is definitely indicated. Lugol's solution by mouth or rectum, is the preparation of choice. Sodium iodide, intravenously, should be used in desperate cases; two doses a day, each dose 15 grains, usually will overcome the crisis.

The rules applying to the use of digitalis in heart disease are applicable also to heart complications associated with hyperthyroidism. Hyperthyroidism does not contraindicate the use of digitalis, but sound clinical judgment would declare against its use unless definite benefit can be gained by it. It is no longer common practice to give digitalis to cases of hyperthyroidism having rapid rate but normal rhythm; it is doubtful if digitalis under these circumstances can lower the heart rate appreciably. We have, however, in digitalis an excellent and easily available measure for the control of auricular fibrillation; the therapeutic results are striking. Under adequate doses of digitalis there is prompt objective and subjective relief of the tumultuous heartbeat.

In the American clinics, the powdered leaf, in capsule or tablet, is insistently preferred to the less stable liquid forms. It is essential to obtain early concentration in the tissues and then maintain such concentration. Usually 18 grains at a single dose, and 6 or 8 grains 8 hours later, will suffice for the first 24 hours; then 2 or 3 grains daily will serve to keep the patient digitalized. Satisfactory results almost

always can be obtained in 8 hours. There are very few, if any, patients who can not take digitalis. Vomiting, however, must be guarded against. The proper dose is best determined by the clinical response of the patient. Symptoms of poisoning—coupling of beats, nausea, and vomiting—are easily recognized. The electrocardiograph can be of great help in digitalis therapy; it can indicate over-digitalization by the discovery of frequent premature beats of ventricular origin, and depression of the previously high "T" wave. The trained clinician, however, can safely manage without the use of this instrument.

Quinidine is used in auricular fibrillation. It is a dangerous drug. Severe valvular disease with cardiac decompensation and heartblock, complete or partial, definitely contraindicate its use. Many clinicians can see no place for quinidine in the treatment of auricular fibrillation. Lahey, however, is using quinidine in the control of severe persistent postoperative fibrillation, but never before operation.

There is still another drug to be considered. Novasurol apparently is gaining a definite place in the treatment of cardiac disease with obstinate edema. One must, however, be cautious in the use of this dangerous drug, a drug definitely contraindicated in cases with renal pathology. It should be given in small doses, beginning with 0.5 cc. and only after digitalis and other measures have proved unsuccessful. Novasurol acts through its ability to eliminate sodium chloride and water. It is decidedly more effective in combination with ammonium chloride than when given alone. In congestive heart failure, with obstinate edema, which is solely the result of severe thyrotoxicosis, novasurol, in combination with ammonium chloride, is frequently of definite benefit.

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#### DISCUSSION

*Dr. H. R. Carter, Jr., Birmingham*—It is interesting that cardiac complications have been noted with greater frequency in Europe, and particularly Switzerland, than in America.

There are three cardiac conditions most frequently noted as complications of the toxic thyroid: Enlargement, acute myocarditis, and atrial fibrillation.

The causes of these cardiac complications have been explained by three hypotheses: The effect of thyroid secretion on the myocardium; malnutrition, catabolism exceeding anabolism, causing all body structures to be undernourished; and the wear and tear factor which has been explained by the tachycardia, the high systolic with a lowering of the diastolic pressure as pointed out by Willius and Boethby. Boaz called attention to the mechanical aspect of this condition, showing that the increased oxygen consumption caused a greater minute flow of blood through the heart.

Dr. Shugerman mentioned the electrocardiograph in toxic goitre.

It has been noted that an increased height of the "T" wave is characteristic of this condition and following decrease of the basal metabolic rate by iodine therapy or operation, the "T" waves diminished in size. An interesting observation from Willius and his associates was the fact that in cardiac complications of goitre there is an enlargement of the left heart, while the myocardial insufficiency, if present, was that of a general heart failure. We recall right heart failure manifests itself with venous engorgement as hepatic congestion, oedema, and ascites; while left heart failure shows itself as pulmonary congestion. If we recall Henderson's law, we can understand that the enlarged left ventricle can overtax the right heart so as to cause its failure by overwork. Dr. Shugerman pointed out to us that the mechanism of cardiac failure has not been fully explained when associated with thyroid disease; but the above statements have been made because they have an importance in its causation.

The pathological findings in the myocardium are not specific, acute myocarditis and necrotic areas have been mentioned, but in no way differ from those of other etiology.

Dr. Shugerman has called our attention to the use of digitalis, and unless this drug is used in adequate doses, no result can be expected. He also called our attention to the use of quinidine and shows that he has the same opinion as Sir Thomas Lewis, "Of great value for experimental research but dangerous to use therapeutically."



Dr. Shugerman (closing)—I appreciate Dr. Carter's discussion. As far as the failure of the left heart and right heart is concerned, in congested heart failure and hyperthyroidism both sides are nearly always simultaneously involved.

The electrocardiograph is an extremely valuable instrument. If you give your patient too much digitalis it will depress the "T" wave but a patient who has congestive heart failure is entirely too sick for the use of an electrocardiograph. I don't see any necessity for it. If a physician is well trained, he can easily tell when a patient has taken too much digitalis.

The most important thing I meant to bring out is the need for getting your thyroid toxin cases operated on quickly. It will be of the greatest help to the patient.

## DIAGNOSIS AND TREATMENT OF COMMON DERMATOSES\*

R. P. Lester, M. D., Mobile, Ala.

It is not my purpose to include the entire field of dermatology in this discussion, nor is it an effort at a superscientific presentation. I only hope that it will be of some benefit to the general man in his daily practice. I am taking up in order of frequency the conditions seen most often by me in my private and clinical practice; I hope it will fit your experience also.

Let us, therefore, consider scabies first. It is an infectious disease caused by the *Sarcoptes scabiei* and may be recognized by its vesiculopapular lesions, the burrow of the parasite, the intense itching which is worse at night, the distribution on the hands, between the fingers, inside the wrist, on the anterior pectoral folds and the abdomen. It is seen rarely on the face and scalp, which is very important in diagnosis.

As to the treatment, the age-old remedy of sulphur and lard is hard to beat, if properly used. However, I wish to submit a formula. It is not original but I believe it is the best I have ever tried. Sulphur—3 ounces; oil of cade—3 ounces; powdered chalk—1 ounce; and sufficient vaseline to make one pound. This is to be applied for four nights, preceded and followed by a hot bath. Hygienic precautions are most essential; I always impress on the patient's mind the necessity for thorough sterilization of the clothes that have become contaminated; boiling for twenty minutes will accomplish this. Do not dismiss the pa-

tient until there are no active parasites left.

For clearer discussion we must divide the ringworm infections into *tinea corporis*, *tinea cruris*, *tinea capitis* and *tinea barbae*.

*Tinea corporis* usually appears as a flattened papule that spreads peripherally, forming in a few days an imperfect circle, the center of which usually has become free of infection. The edge of the ring is the infected portion and is usually inflamed and perhaps slightly elevated. If two or more of the rings overlap various gyrate and multiform lesions are seen. Itching and burning in a mild degree are usually the only subjective symptoms. The lesions are found most often on exposed parts, as face, hands, etc.

*Tinea cruris* or dhobie itch is characterized by a more or less sharply defined area of infection, limited to the genitocrural area, which begins as a papulo-circinate eruption, the circles coalescing to give the large almost solid area involving the scrotum, inner surface of the thigh and the pubic region. Due to its location secondary infection is quite common.

*Tinea capitis* is usually seen in children and is recognized by clearly defined circular scaly areas that are covered with broken hairs and frequently heavy scales and debris.

*Tinea barbae* or barbers' itch may be diagnosed by the limitation of the eruption to the lower jaw, lip and neck, the involvement of the follicles and the slow development of the affection. Demonstration of the organism may, at times, be necessary for a positive diagnosis.

Treatment of *tinea* is governed by the individual case. Where there is no secondary infection or undue irritation the usual parasitocides can be employed. The best of these in my hands are sulphur and salicylic acid, used jointly or singly in combination with other drugs. The ordinary ringworm on the body can often be cleared up by application of tincture of iodine twice daily, Whitfield's ointment or an alcoholic solution of salicylic and benzoic acids is quite efficacious on the infection of the hands and feet. The ultraviolet light is a valuable aid in treating *tinea*, particularly *tinea cruris*. In a good many cases several exposures plus the use of some mild antiseptic the condition will clear them up without

\*Read before the Association in annual session, Birmingham, April 22, 1931.

the use of strong parasitocides. X-ray is a most valuable form of treatment in the hands of a trained technician but an equally dangerous one in untrained hands. It reaches its maximum usefulness in *tinea capitis* and *tinea barbae*. Where it is impossible to employ x-ray the parasitocides must be used.

*Tinea versicolor* is fairly common, particularly in the colored race. It is most often seen on the chest, neck and shoulders and gives a mottled appearance to the area, the individual lesions themselves being macular and of a reddish-brown color. There is a small amount of fine scales over the affected area. The slow development and distribution make the diagnosis easy.

The treatment consists of thorough cleansing with soap and water, sponging with alcohol and the application of salicylic acid—2 grams; sulphur—4 grams; and vaseline—30 grams, twice a day, with thorough sterilization of contaminated clothes to prevent re-infection.

Impetigo contagiosa, is an acute infectious disease of the skin characterized by erythematous lesions over and on which vesicles form; the latter, filled with clear fluid, soon change to pustules, the pustules rupturing leaving infected areas covered by loosely attached crusts. The distribution of impetigo follows no definite plan but is usually determined by areas that the patient can reach and infect.

Impetigo can usually be cleared up readily by removing all crusts and purulent material with warm water and soap, further cleansing with some good antiseptic, such as equal parts of alcohol and boric acid, and a dressing of ammoniated mercury ointment (5-10%). This procedure should be repeated twice a day.

Urticaria or nettlerash is an acute inflammatory process characterized by wheals that cause intense itching and burning. The eruption may assume various forms, large wheals with an erythematous edge, irregular patches, or small elevations that give an irregular appearance; linear and concentric elevations are seen occasionally. The causes of urticaria may be divided into internal and external. The internal is represented by the ingestion of certain foods and the absorption of toxins from some focus of infection, e. g., teeth, tonsils, etc. The external causes are pollens from

various plants, sunlight and cold or heat. The diagnosis can usually be made by the suddenness of the onset, the history of the ingestion of some particular food, the intense itching and burning and the tendency to dermographism.

The treatment consists mainly of the removal of the cause.

To do this is sometimes no easy task, but the cause should be found in time. Resource to dermal tests may be necessary to determine the cause if it be some pollen. Alkalinization and elimination are necessary. In the chronic cases or the recurrent cases I have found the intramuscular injection of an autogenous serum to be of definite value. The blood is collected in the morning and the separated serum injected deep in the gluteal muscle in the afternoon. Although sometimes there is rather violent reaction, the results are usually gratifying. Local applications are of little value; adrenalin hypodermatically in some cases will give temporary relief and in others will not. Careful attention to the diet and general hygienic care are also essential.

Erythema multiforme is a toxic rash occurring principally on the neck, upper portion of the face, the dorsal surfaces of the hands and feet, and the forearms and legs. Due to the varied morphology of the lesions, the condition is divided into separate types, each type taking its name from a description of the predominant lesion, namely, erythema vesiculosum, erythema annulare, erythema bullosum, erythema iris, etc.; those named are the most frequent in my experience. The diagnosis is not always easy, as certain drug rashes and other skin diseases simulate them closely; therefore a thorough history should be taken to rule out drug rashes, and a careful general examination of the patient be made to locate foci of infection. The lesions of the maculo-papular group are bright red to reddish brown, well defined macules or flat-topped papules that have a tendency to spread peripherally. These will coalesce to form gyrate areas. Erythema iris gives rings of different colors and is often seen on the hands and feet. The vesicular and bullous groups occur as areas of discreet lesions, by a hyperemic ring; this type is seen most often on the extremities and the mucous membrane of the mouth.



The treatment of these conditions is largely dietary with elimination of foci of infection. Except when the skin lesions become pustular, local treatment is of little value and then ammoniated mercury in 5-10% ointment will usually clear up the infection.

Seborrheic dermatitis is primarily a disease of the scalp that spreads over the face, neck and body through contact of these parts with the scales from the scalp. When seen on the scalp alone it is characterized by a branny desquamation that spreads rapidly to the entire scalp. In some instances the whole scalp is covered by a closely adherent scale from which small particles break off. When seen on the body, it is most often found on the forehead, ears, naso-labial folds, back of the neck, and the sternal and intrascapular regions. However, I have seen two cases recently where the entire back from the waist line up was involved. The lesions on the body are usually small desquamating patches that itch and burn on exposure to heat or soap. If you rub your fingers over them there is an oily feel to the fingers afterwards. The cause of the condition is not known but there is little doubt that it is highly infectious.

The treatment of seborrheic dermatitis is aimed primarily at the source, which is the scalp; although the areas on the body require some attention also. The method that has given the best results in my hands is as follows: Begin the treatment by the application of salicylic acid—1 gram; ammoniated mercury—3 grams; petrolatum—30 grams, to the scalp at bedtime. This is to be washed out the following morning with hot water and soap, rinsed with cold water and combed with a fine-tooth comb. Nothing is used during the day but each night at bedtime for the next six nights a lotion is applied to the scalp; this lotion consists of bichloride of mercury, chloral hydrate, spirits of formic acid, castor oil and alcohol, the amount of each being determined by the oiliness or lack of oiliness of the patient's scalp. The lesions on the areas not covered by hair are kept free from contact with soap and are cleansed with the above lotion once a day. The ultraviolet light is of definite value in this condition and I use it twice a week on all areas involved. The exclusion of fats and

grease generally from the diet with attention to general hygiene is also essential.

Infantile eczema is a condition seen in infants of the nursing stage up to the eighth month, but may be seen as late as the second year. The eruption usually begins on the face as an erythematous area on which vesicles soon appear; this spreads to the scalp and often to the trunk as well. The vesicles rupture and oozing, crusting areas result. There is intense itching and the child's efforts to scratch not only has a tendency to prolong the condition but will often result in severe secondary infection that is difficult to eradicate.

The treatment should be directed primarily at the cause which is usually dietary, carbohydrates or fats being the most common offenders. An examination of the stools will give this information and if the bowels are not functioning properly they should receive attention. The affected areas should be protected from the child's hands. Local application of a 6% distilled tar ointment, cleansing with olive oil and the abstinence from soap on the areas will usually suffice to clear them up where there is no secondary infection.

#### DISCUSSION

*Dr. F. E. Stockton, Birmingham*—I congratulate Dr. Lester on the way he has handled a difficult subject, an attempt to treat a number of different diseases in one paper.

If I should criticise his paper at all, it wouldn't be the dermatological aspects of it. It would be the attitude which seems to minimize too much the mysteries and problems of our branch of the medical profession. I remember a number of years ago a doctor, who was engaged in a rather large general practice, remarked to me he didn't know much about dermatology; that there were just two diseases that he knew, but he had mastered those. He never had any difficulty in recognizing itch and eczema and treating them. I envy him. I haven't always found it easy to recognize even those diseases.

There are three kinds of patients that are hard to diagnose with the itch. One of them is the careful patient that comes to the doctor as soon as he or she, and it is mostly she, has had an itching papule for an hour or two. The parasite hasn't had a chance to localize. Another kind is the excessively cleanly who scrub themselves and change their clothes frequently. Dr. Montgomery of San Francisco tells of one patient he had who had the itch for a number of weeks and only had the papules on the flexor surface of one forearm. And the other kind is the kind that suspects, with reason, perhaps, it is the itch, and know that sulphur and lard is a pretty good treatment. They have already used sulphur and lard and salicylates

until they have a beautiful sulphur dermatitis extending over a large part of the body. In a great many of those cases you don't know whether they are cured or not. They have had enough treatment whether it is the right kind or not.

As far as the treatment is concerned, it is very easy. Personally, I prefer a combination of sulphur, salicin and sulphur, rather than tar and sulphur. If you can remember the sulphur you can remember the rest also.

The doctor has adequately treated the ringworm as far as he treated it. Perhaps he carefully omitted ringworm of the feet. There is an article in the *Journal of the American Medical Association* about dermatologists who are unable to treat their own feet. I had an interesting experiment on myself about two weeks ago. I found I had ringworm of the foot. I had no medicine in the house and was too lazy to go and get it. In ten days or two weeks my ringworm was gone.

Urticaria, when acute, can be cured by anyone who recognizes it. When it is chronic, it may not be cured by anybody. It may last for years and tax the diagnostic abilities not only of the dermatologist himself, but of the best consultants he can get in his community. Then some little accident may happen, like that which happened to a woman in Birmingham who had had urticaria for every day for something over eight years and had been in the hospital and examined by every doctor in Birmingham. One day she was down town at a sale and somebody knocked something off the counter and she stopped very suddenly to pick it up, and as she did so, she had a rush of pus and blood from her nose. Hurrying to the rest room, she claimed she filled up two or three towels with it. She went to her nose and throat man and he found she had a badly infected sinus, and when he cleaned that up she was free of urticaria.

I hope that the doctor's picture of infantile eczema reflects his own experience in his work down in Mobile. I hope so. I wouldn't want anyone to have any worse time than I have had, and I hope everybody will have a better time than I have in the treatment of infantile eczema. My own experience of infantile eczema is that it isn't a simple matter by any means. I agree with a pediatrician who wrote in the *Journal of the American Medical Journal* that infantile eczema, in his experience, has required hospitalization with day and night nurses.

*Dr. Lester (closing)*—In answer to Doctor Stockton's question regarding treatment of ringworm of the feet, I am quite free to admit ringworm of the feet is difficult to treat. However, we are able quite often to clear the case up by using some strong parasiticide such as salicylic acid, alternately using some bland lotion to prevent too much destruction of the tissue, particularly the underlying tissue. However, the x-ray is again the treatment of choice, adequately handled. In the presence of secondary infection and that is quite common, treatment must be altered to fit the case. Some patients will get well in spite of what you do and some of them won't. I am frank to admit I have nothing to offer that the literature has not already offered.

As to the Doctor Stockton's reference to infantile eczema, I didn't mean to make it sound quite so easy. I was just giving you a description of the so-called easy cure. Sometimes I think they will clear up quite readily, sometimes they won't clear up over a long period of time. They will get rid of it in time according to my limited experience. Sometimes some of them prove very obstinate.

I want to express my appreciation to the doctor for his gentleness in handling an inadequately handled subject.

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**Reflex Tenderness in Gall-Bladder Disease**—In the course of examination of a large number of patients for possible disease of the gall-bladder, we have observed that tenderness in the right subcostal area is a somewhat uncertain sign. While it is safe to state that a diseased gall-bladder is always more or less tender, the difficulty of eliciting such evidence lies in the fact that the position of the vesicle is subject to considerable variation in different patients, and, not infrequently, in the same individual. Thus, a given point on the skin surface may, or may not, overlie the gall-bladder.

We have had occasion to note, during radiographic examination of the gall-bladder, that tenderness on slight pressure over the right costovertebral angle was of frequent occurrence. Careful checking of the incidence of this tenderness with the presence of cholecystitis or cholelithiasis has led us to regard this sign as of diagnostic importance. In our experience it has been consistently more accurate than subcostal tenderness anteriorly.

Because this sign does not appear to be commonly known, we searched for a possible reference to it in the literature. We found that Boas, in 1895, described this phenomenon as diagnostic of cholelithiasis. We are of the opinion that even lesser degrees of gall-bladder disease can be detected by this sign.

The patient is placed prone on the examining table, the arms by the sides. The examiner stands at the side, and placing the middle finger and thumb, respectively, over the left and right costovertebral angles, applies gentle pressure, first over the left and then over the right side. He then explores the area from the tenth to the twelfth ribs, in a zone one or two inches from the spine. It is better to palpate the left side first, in order to determine the general reaction of the patient.

In the analysis of one hundred unselected cases, we found tenderness over this area, on the right side, in 92.3% of patients showing roentgenologic evidence of gall-bladder disease. It was absent in 95.7% of the cases regarded as normal. Of fifty-two cases of gall-bladder disease, thirteen patients have been operated upon to date, and the diagnosis confirmed by histologic studies. Of these thirteen, 92.3% showed reflex tenderness.

Tenderness due to gall-bladder disease is found invariably higher than that produced by disease of the right kidney. However, its location may vary a distance of one or two ribs, depending on the position of the gall-bladder.—Levene in *N. E. Jour. Med.*, Aug. 20, 1931.



# THE JOURNAL

of

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and of

The State Board of Health

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September 1931

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## ALABAMA'S TUBERCULOSIS PROBLEM

Alabama has no state-owned, state-operated tuberculosis sanatorium as have many other states.

In the earlier years of the present century, the public conscience became violently and acutely aroused as to the need for marshalling all human forces—national, state and municipal, official and volunteer—in a concerted effort to dethrone tuberculosis from first position as “Captain of the Hosts of Death”.

Be the cause what may—the contributing factors have been legion—tuberculosis has been deposed from its high pinnacle by “heart disease” and now sulkily sits as the fourth chief offender in this regard. From 1898 to 1908 the death rate from tuberculosis dropped *one quarter*; in the next decade, that is from 1908 to 1918, it dropped *one-third*; from 1918 to 1928, it dropped *one-half*.

During this period, Alabama, through legislative enactments in 1907, 1911, 1915, 1919 and 1923, endeavored to approach its tuberculosis problem in various ways and from many angles, by appropriating funds for hospital construction or by setting up tuberculosis commissions. Fortunately, as the problem now presents itself to us, none of these measures took on permanent shape. The health departments in many of our Southern States now find themselves burdened with a tremendously heavy financial load in the maintenance of such institutions, which, at the same time, cripple their budgets for other major health activities of immediate if not as great importance.

Alabama, therefore, has profited by the experiences and mistakes of other states. Instead of attacking her problem primarily *from the center* that is, through the State Health Department and with one large central hospital—it plans to make the chief assault *from the periphery*—that is, through the County Health Unit and with a number of smaller county sanatoria. Alabama now has fifty-four full-functioning and fairly well manned County Health Units—more, by far, than any other state can boast. The Legislature of 1927 wisely provided sufficient funds for the State's participation in this plan, which the Legislature of 1931 not only saw fit to continue, but, in addition, enacted legislation whereby the State can now financially aid these counties in the handling of their own tuberculosis. The intent of the Tuberculosis Bill (known as the “Patterson Bill”), recently enacted into law, is to stimulate and educate counties to make necessary provision for this afflicted group, just as they are now making provisions for other groups in schoolhouses, almshouses and jails. In its ultimate solution, tuberculosis is a community problem, to which state, county, municipality and all other agencies, official and unofficial, must unstintingly contribute. This bill paves the way for the State's participation in this activity; it now becomes the duty of the medical profession and all interested persons to see that counties go seriously to work, so that they may share in this state subsidy which allots to each county one dollar a day for every case cared for under the provisions of this act. Because of the present embarrassed condition of the State's finances, these funds are not immediately available, but the hope is entertained that they soon will be. There are, at present in this State, four tuberculosis sanatoria supported exclusively by local funds and agencies and designed to care for purely local problems. The State Board of Health hopes, through the aid provided by this bill, to see many such small hospitals, of from twenty-five to fifty beds, springing up in many of our counties. The need for some form of hospitalization becomes increasingly more acute, both from the standpoint of control measures and of treatment, as the activities of our chest clinicians enlarge and more and more of the incipient cases are unearthed. True it is that much is

being accomplished, in the way of home care and management, through a sympathetic co-operation between the family physician and our health units; but in many instances the economic aspect looms so large, that proper control measures can be had only through hospitalization.

A conservative estimate places the number of open cases of tuberculosis in Alabama to-day at something around 20,000; a tremendously big problem; and yet not wholly disheartening.

With fifty-four organized health units on the firing line; with three chest clinics adequately equipped; and with prospects bright for many rescue stations soon to be established at strategic points, our hopes run high that the enemy's line may soon be deeply dented and eventually rolled back.

J. N. B.

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#### A CHALLENGE

That the medical profession has a very definite responsibility in the matter of deaf and blind children cannot be denied. Yet lack of knowledge of the limitations of the provisions made by the State for such handicapped ones has resulted in a failure on the part of the profession to discharge fully its obligations. Dr. H. B. Searcy, Chairman in 1930-1931 of the Association's Committee for the Prevention of Blindness, appreciating the importance of the situation, introduced resolutions at the recent annual session in Birmingham looking to the solution of certain aspects of the problem. These resolutions, which appeared on page 73 of the August number, the reader is urged to consider in connection with the paragraphs about to follow.

Information concerning the Alabama Institute for Deaf and Blind, furnished Dr. Searcy by Mr. D. A. McNeill, Superintendent, reveals interesting facts and indicates by inference how the profession at large may aid along the lines referred to in the resolutions of the Committee for the Prevention of Blindness. Mr. McNeill's statement follows:

"The Alabama School for the Blind was established at Talladega in 1867 as a department of the School for the Deaf. In 1887 the Legislature appropriated \$20,000.00 with which to erect and equip a building to be used by blind students. The

present location of the School for the Blind was selected and the central building erected in 1888. Since that time a number of buildings have been added for dormitory and school room space. At present the School for the Blind consists of 165 pupils ranging in ages from seven to twenty-five years. Under the law no one can remain in school after having reached the age of twenty-five years nor can anyone be admitted after having reached the age of twenty-one years. At the Negro School for the Deaf and the Blind, there are forty-one pupils in the blind department. From the above figures it is seen that the State is caring for 206 pupils in the two schools for the blind.

"There are no set requirements for admission to either the School for the Deaf or the School for the Blind, but those who are unable to work in the public schools are accepted in either the School for the Deaf or the School for the Blind. When parents and teachers state that children cannot pursue successfully the work of the public schools, such children are accepted. Of course, this element of uncertainty is found in only a small percentage of the pupils who are just on the dividing line between eligibility to the public schools and the Schools for the Deaf and the Blind. No question arises in the placing of ninety or ninety-five percent of all children in both schools. They are either deaf or blind to such an extent as to admit of no question as to eligibility. The five or ten percent about which there is a question constitutes a real problem of the school and makes the services of a specialist almost necessary. Much remedial work might be done if the schools were in the care of competent otologists and oculists. For several years we had at the beginning of each school year a hurried examination by two of our local physicians and a local dentist, who passed on the condition of eyes, ears, throat and teeth and suggested remedial measures for some and treatment for others. Our school physician has undertaken the removal of all tonsils that seemed likely to affect seriously the health of the possessors. We have had extracted those teeth giving acute pain. We have urged parents to have other dental work done and have had this work done ourselves when directed by parents and provided with funds. We have had an ar-



rangement by which all dental work was done at the price of one dollar per tooth regardless of what had to be done to it. Thyroid operations have been done by our school physician and appendectomies when necessary. We need a specialist to examine carefully each child at the beginning of school and determine what remedial measures, if any, should be applied both for the deaf and the blind. This examination should be followed up with at least monthly visits to the school by the specialists, it being possible for our school physician, who visits the schools daily, to administer the treatments between visits of the specialists.

"At the School for the Deaf one of our great needs is an instrument known as the radio ear, which accentuates sound and reaches whatever residual hearing the child may have. The slightest hearing is an aid to speech and the child whose hearing is reached by artificial means is given his first idea of sound and of speech.

"The State appropriates \$320.00 per year for each child. The average salary of teachers is \$1,400.00 and each teacher is supposed to care for ten children, thus making the teaching expense of each child \$140.00 and leaving from the total appropriation \$180.00 with which to furnish food, books, all school supplies, laundry, water, fuel, lights, and salaries of officers, supervisors, and servants. One can readily see that out of this small per capita appropriation, it is useless to consider an extensive campaign of remedial measures for the students of this institution. If the State feels that this school should function as a hospital, it would be necessary to make an appropriation covering the cost. Under the law the function of the institution at present is educational, and only such medical attention is given as will enable the educational work to proceed in an orderly and uninterrupted way."

#### TRAUMATIC SURGERY

With the rapidly increasing number of accidents, and with the universal expansion of industry, a new demand today is being made necessary as a whole on the medical profession. This demand means improved knowledge as to the proper care of injuries, bringing about a shorter period of convalescence, less permanent disabilities—resulting

in an economic saving to the patient, employer and doctor.

The importance of proper first aid, immediate treatment, the proper mechanical cleansing of all wounds, early reduction of all fractures whenever possible; the proper fixation (external or internal) of all fractures, and the close daily follow-up of all injuries cannot be stressed too much. There should be a continuing personal contact between the patient and the physician who is directly responsible for the injury during the whole convalescent period.

The mere reduction of a fracture, or the closing of a wound, is only an incident which might be of very minor importance in the history of that patient's convalescence as compared to the close follow-up with definite instructions as regards any important procedure and advice which bring about early functional results, with lessened disability.

Traumatic surgery can hardly be classified as any distinct branch of surgery. A specialist taking care of any part of the body following injury which pertains to his specialty may be called a traumatic surgeon. The same pertains to any *general practitioner or surgeon also*. Every specialist should prepare himself to be familiar with any complication or sequelae resulting from an injury as pertaining to his particular specialty or ability.

Hospital facilities and specialists are not always available; and when these are not at hand the general practitioner has not done his best by the patient until he has acquired sufficient knowledge and technique of all the recent scientific treatments of that particular injury, giving the patient every advantage and assistance possible that is within reach of the general practitioner's ability.

It behooves the general practitioner not to "fight shy", as it were, of obtaining knowledge of the proper treatment of any particular injury but to prepare himself more than ever to know what to do, and if not knowing this, when to ask for help and from whom.

The importance of this attitude is more definitely realized when one recalls that practically 75 per cent of all injury cases are first seen by the general practitioner.

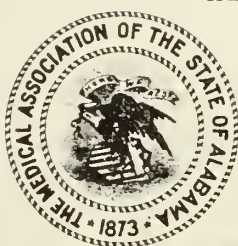
H. E. C.



J. N. BAKER, Montgomery  
1915-1916



HENRY GREEN, Dothan  
1916-1917



W. D. PARTLOW, Tuscaloosa  
1917-1918



D. F. TALLEY, Birmingham  
1921-1922

PAST PRESIDENTS OF THE ASSOCIATION



## PROCEEDINGS OF THE ASSOCIATION

TRANSACTIONS OF THE SIXTY-FOURTH CONSECUTIVE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA, HELD AT BIRMINGHAM, APRIL 21-24, 1931.

(Continued from page 75 of the August number)

### Afternoon Session, Tuesday, April 21

The session was called to order at 2:30 p. m. by President Harrison, whereupon, under miscellaneous business, the Secretary brought the following communications to the attention of the Association:

- (1) Letters from the Memphis and Shelby County Medical Society regarding the 1932 meeting of the American Medical Association;
- (2) A letter from the Associate Director of the United States Commission for the Celebration of the Two Hundredth Anniversary of the Birth of George Washington;
- (3) A letter from Miss Myrtle Brooke, President of the State Conference of Social Workers, inviting members of the Association to the conference scheduled for April 26 at Tusculum—Sheffield.

The President referred the communications to the Board of Censors.

### Scientific Program

Dr. George Blue of Montgomery presented an essay entitled "A Neglected Boil". The paper was discussed by A. C. Jackson, Jasper; S. R. Benedict, Birmingham; W. W. Harper, Selma; and R. S. Hill, Montgomery.

Dr. G. C. Kilpatrick, Mobile, read a paper "Use of Insulin in Diabetes". It was discussed by Drs. Seale Harris, J. S. McLester, John W. Simpson, J. W. Mehaffey and W. S. Geddes of Birmingham.

Dr. Clifford Lamar, Birmingham, presented a paper entitled "Recent Progress in Pediatrics" which was discussed by Dr. D. T. McCall, Mobile; A. A. Walker, Birmingham; and W. W. Harper, Selma.

Dr. Clarence K. Weil of Montgomery presented an essay entitled "Plants Causing Hay-Fever in Alabama". The paper was discussed by M. T. Davidson of Birmingham.

At 5:10 p. m. an adjournment was taken until 8:00 p. m.

### Evening Session, Tuesday, April 21

The Association was called to order at 8:00 p. m. by the President, who presented

the first essayist of the evening, Dr. W. S. Littlejohn of Birmingham. Dr. Littlejohn's subject was Encephalitis. The paper was discussed by Drs. H. S. Ward, Birmingham and Clyde Brooks, University.

Dr. Alfred Blalock, Vanderbilt University, read a paper entitled "The Mechanism of the Production and Treatment of Shock". Drs. Clyde Brooks, University; Adrian Taylor, Birmingham and President Harrison discussed the paper.

Dr. M. Hines Roberts of Atlanta read a paper on "Some Studies in Congenital Syphilis", which was discussed by A. A. Walker of Birmingham.

Dr. W. F. Harper, Selma, presented a paper entitled "The Diagnosis and Treatment of Septic Hands".

Whereupon at 10:00 p. m. the Association adjourned to meet in the Erlanger-Jefferson Theatre at 9:00 a. m. Wednesday, April 22.

### Second Day—Wednesday, April 22

The Association was called to order at 9:30 a. m. in the Erlanger-Jefferson Theatre by the President who presented, as the guest of the Association, Dr. Denegre Martin of New Orleans.

The first paper of the morning was "The Effect on the Toxicity of Tetanus Toxin of Withholding Water from the Diet" by Dr. Emmett B. Carmichael of the Medical Department of the University of Alabama. The paper was discussed by Dr. J. S. McLester, Birmingham.

Dr. Joseph B. Greene, Asheville, N. C., presented a paper entitled "The Ear, Nose and Throat in Relation to General Diseases", which was discussed by Porter Stiles of Birmingham.

Dr. M. Y. Dabney, Birmingham, read a paper on "Sterility in Women". It was discussed by Dr. Clarence Weil, Montgomery.

The President introduced Dr. Kendall Emerson, Director of the National Tuberculosis Association, who addressed the Association as follows:

Gentlemen, it is a very great privilege I have at this moment to bring to you from New York greetings from the National Tuberculosis Association. It is quite unexpected and I have no

speech prepared, which is fortunate for you, due to the fact your president has limited me to three minutes.

There are only two subjects, according to our philosophers up North, which are big questions in the world today: One is prohibition and the other is business depression. I shall not take more than a moment to refer to the prohibition question. You run it very satisfactorily down here. The business depression, however, is a subject which has its very direct influence and bearing on the work I represent at the present time, tuberculosis. We are already getting echoes of what that is going to mean. I say advisedly "going to mean," because the lower standards of living which go with depression do not bring their harvests immediately. It is a deferred effect we must expect. It was shown conclusively during the war in the mounting curve of the tuberculosis rate we observed in Germany, not very noticeably in 1915, but going up sharply in 1916, 1917, 1918 and 1919, when the general depression with the hard conditions of the war had full time to show their effect.

That is what is going to happen in this country we all fear. How serious it will be nobody knows. It depends on how long the depression lasts. We have had the first inkling in New York City where our tuberculosis clinics have increased about forty percent over last winter. We find it in Massachusetts where the ten year tuberculosis program is going forward in the industrial areas. Tuberculosis among children has shown a very great rise, and while in the well-to-do parts of the city the usual expected decline of cases has been shown, in the poorer areas, the increase has been rather striking, and these are the little hints which may mean trouble ahead, and which means we should all keep our eyes on the tuberculosis situation and do all we can to forestall the inevitable effect of the business depression.

Gentlemen, it is a pleasure to be here this morning. I appreciate the opportunity which I shall have of hearing my old friend, Dr. Cunningham, talk very shortly, and I congratulate you in advance on what you are going to hear from him.

I bring you again greetings from New York, the National Offices of the Tuberculosis Association, and as fellow workers may I bespeak your interest in our National organization, your help and advice in the way we carry it on, your criticism kindly and honestly meant on which we thrive, and without which we can have no lasting success.

President Harrison: The system of organization under which the Medical Association of the State of Alabama operates is largely the product of one man's brain. The few changes that have been made in the organization in the last twenty-five years since he went away have been very trivial in comparison with the large body that has remained, the body that was contributed by Jerome Cochran.

Some twenty-five years ago, shortly after the death of Dr. Cochran, in his address as president of the Association. Dr. L. L. Hill, one of our decidedly beloved members, advised the Association that it have as a special order at 11:00 o'clock a. m., on the second day of the annual convention a special order set aside for a lecture by some distinguished member of the medical profession anywhere from Canada to the Gulf, this being the outstanding honor offered by the Association.

Since this lecture was established, we have had men from the East, from the Middle West, from the Far West, a few from the South, and at no time have we had one more heartily welcomed by the Association than the lecturer today, a native of South Carolina, a graduate of Johns Hopkins, and for quite a while a teacher in his Alma Mater, and at present the head of the Department of Anatomy at Vanderbilt University.

It gives me a great deal of pleasure to call him my friend, and introduce to you Dr. Cunningham of Vanderbilt.

Dr. R. S. Cunningham: Mr. Chairman and Members of the Association: It is with some trepidation that I approach the Jerome Cochran Lecture, both because of the eminence of my predecessors and because of the words of my friend, Dr. Emerson, and of my friend, Dr. Harrison. There is also one other reason why this material I wish to present causes me some bother, and that is it is a hard thing to co-ordinate the work of ten years into the space of an hour, but unless I present the entire co-ordinated field of work it will be impossible to give you any conception of the thought which is in our minds in this regard to the progress of work in tuberculosis.

It is needless for me to say that it is a very great pleasure and honor to make this lecture today, and particularly since it is in the South, the land of my birth, and the home of my adoption, having been away for a number of years.

Thereupon Dr. R. S. Cunningham presented the Jerome Cochran lecture, entitled "Studies on the Pathology of Tuberculosis and Syphilis," accompanied by lantern slides.\*

Dr. J. H. Edmonson moved that a rising vote of thanks be given Dr. Cunningham for the manner in which he had presented a most difficult subject. It was so ordered.

The Secretary was asked by President Harrison to announce the vacancies which would exist in the College of Counsellors

\*The Jerome Cochran Lecture appeared in the July number of the Journal.



at the end of the present session of the Association. The vacancies and the reasons therefor follow:

Second District—3: J. C. McLeod is to be elevated to Life Counsellor; G. C. Marlette has changed his place of residence; M. H. Hagood's first term of seven years has expired.

Fifth District—1: J. J. Walls' first term of seven years has expired.

Ninth District—2: The first term of seven years of E. M. Mason and W. S. Rountree has expired.

Tenth District—1: R. L. Hill's term of seven years has expired.

In keeping with the Constitution the Secretary designated places of meeting for Counsellors and delegates concerned in making nominations to fill vacancies.

At 12:20 an adjournment was taken until 2:30 p. m.

#### Afternoon Session, Wednesday, April 22

The Association was called to order at 2:30 p. m. President Harrison introduced Mississippi's fraternal delegates, Drs. Philpot and Walker, and extended to them the privileges of the floor.

The President relinquished the chair to Vice President Mayer.

Dr. J. T. Cater, Chicago, read a paper on "The Relation of the Eye to some Neurological and General Disorders". The paper was discussed by Drs. J. D. Perdue, Mobile, and W. S. Hannah, Montgomery.

Dr. E. M. Mason presented a paper entitled "The Differential Diagnosis of Certain Fevers".

Dr. W. A. Smith, Atlanta, read a paper on "Management of the Epilepsies". It was discussed by Drs. J. S. McLester and H. S. Ward of Birmingham.

Dr. R. P. Lester of Mobile presented a paper on "The Diagnosis and Treatment of Common Dermatoses". The paper was discussed by Dr. F. E. Stockton, Birmingham.

At 5:10 p. m. an adjournment was taken until 8:00 in the evening.

#### Evening Session, Wednesday, April 22

##### *Public Meeting*

The session was called to order at 8:00 p. m. at the Erlanger-Jefferson Theatre. In introducing the speaker of the evening, President Harrison said:

Many years ago someone wrote a beautiful little poem beginning, "Backward, turn backward, O Time, in your flight; make me a child again just for tonight."

That poem has had a very appealing sentiment for many people. A few days ago I heard an old man express the reason for that appeal; he said it had to do with remembering the time of your early youth when you did the things you shouldn't have done but didn't get caught at them.

I have thought of that little poem a great deal tonight because of the opportunity to be, for an hour or two, associated with a gentleman that I had not seen since my early boyhood days.

In the country, thirty-five years ago, it was generally understood that the very worst boy known in the community was always a preacher's son. We had a preacher that had two boys that were different from each other and different from most preachers' sons. One of these boys was known to be extremely bright and very good. By a very strange series of events he became a lawyer. I don't know why such a boy should follow such a profession. It never has been explained. They say he is a pretty good lawyer. Whether he still tells the truth deponent saith not.

But the other boy was different from the older brother,—very different. It was early understood he would do anything except lie and steal. You know, if there is anything we look back to with reverence, it is to those who taught us, and I particularly revere the boy who taught me how,—we didn't go bathing then. We went in washing. I never heard of bathing until I went to college. I look back with a great deal of affection to the boy who taught me how to swim, how to hunt, how to fight, and especially how to cuss.

I promised not to tell quite all I knew about this boy, but there is one thing I can't suppress. Not long ago, I noticed that they had arrested a prominent man somewhere,—I think it was in Omaha,—anyway it was far away, and they discovered accidentally he was living with his seventeen wife, and all the other women were living, and when his wife heard about this she said she was very much surprised but he always had a winning way with women.

I don't know that this story has any present application, but I do remember that as a boy the rest of us didn't want to go courting if Olin West was along. We just didn't feel comfortable. We felt like we wouldn't make good. So far as I know—I don't know—I don't know at all—I have never heard of but one wife.—but I don't know.

But I do know this: I know an Alabama boy, born at Gadsden, the son of a Methodist preacher, never allowed to live anywhere more than four years at a time, and rarely more than two, educated in Tennessee to become Health Officer of Tennessee, and one of the best known for his excellent work of any health officer of the United States was called to a higher place, that of Secretary of the American Medical Association, and in the work, the splendidly successful work he has done there, he has become known not only throughout our own country but throughout the world. I am proud to have known him as a boy. Personally, I am very proud to claim him as a friend. It gives me great

pleasure to bring him here on this occasion, though he is here only a short time, to talk to you about some of the very personal things concerning doctors, and you, and society.

Dr. West used as the subject of his address, *Some Problems of Medical Ethics.\**

This Great Peril—A motion picture concerning the control of cancer was shown under the direction of the American Society for the Control of Cancer.

A pageant, illustrating the history of medicine and staged under the direction of Dr. J. R. Garber, President, Jefferson County Medical Society, concluded the evening's program.

### Third Day—Thursday, April 23

The Association was called to order at 9 a. m. by President Harrison whereupon, under miscellaneous business, the Secretary introduced, by request of Dr. Jerre Watson, the following resolution:

*Resolved*, That Article XIII, Section 6 of the Constitution of the Medical Association of the State of Alabama, which now reads: "The board shall elect from the College of Counselors by not less than a majority vote of its members an executive officer to be known as the State Health Officer, and shall submit the name of the officer so selected to the Association (the State Board of Health), in annual session, for confirmation", shall be amended by the addition of the following sentence: *The State Health Officer shall not be permitted to hold office as a member of the State Board of Censors.*

The resolution was referred to the Board of Censors.

### *Scientific Program*

Dr. Robert Parker of Montgomery presented a paper on "Constipation in Childhood". It was discussed by Dr. W. M. Salter, Anniston.

Dr. Lucius E. Burch of Nashville presented a paper on "Menstrual Disorders that Will Be of Interest to the General Practitioner." The paper was discussed by Drs. R. S. Hill of Montgomery and M. Y. Dabney of Birmingham.

Dr. Gilbert F. Douglas introduced to the Association Dr. B. T. Beasley, Atlanta, Director General of the Southeastern Surgical Congress. The privilege of the floor was extended Dr. Beasley by Vice President Salter, occupying the chair.

\*Dr. West's address will appear in a subsequent issue.

Dr. H. P. Shugerman, Birmingham, read a paper entitled "The Heart in Toxic Goiter". It was discussed by Dr. H. R. Carter, Jr., Birmingham.

Dr. W. F. Jordan, Huntsville, presented a paper entitled "Acute Appendicitis in General Practice—High Mortality of Bad Management." The paper was discussed by Drs. A. S. Frasier, Dothan; M. Y. Dabney, Birmingham; T. E. Tucker, Monroeville; B. F. Anderson, Sellers; and T. J. Brothers, Anniston.

Dr. W. E. Willson read a paper on "The Age of Syphilis". The paper was discussed by Dr. G. G. Woodruff, Anniston; Dr. P. B. Moss, Selma; Dr. B. F. Anderson, Sellers; Dr. T. E. Tucker, Monroeville; Dr. J. N. Baker, Montgomery; Dr. Hugh Boyd, Scottsboro; and Dr. W. T. Burkett, Tusculumbia.

Whereupon at 12:35 an adjournment was taken until 2:30 p. m.

### Afternoon Session—Thursday, April 23 2:30 P. M.

President Harrison: The meeting will come to order.

Under the head of miscellaneous and unfinished business, Dr. Hill wants to make a statement.

Dr. R. S. Hill: Mr. President and Members of the Medical Association of the State of Alabama:

A statement made by a man in high official position carries more force and is more far-reaching in its effect than a statement made by a private citizen. Therefore, when the Governor of the State makes a statement, an unfair and unjust and unwarranted statement that reflects upon the intelligence, that reflects upon the sincerity, that reflects upon the honesty of conviction of any citizen or any group of citizens, it is cause for deeper resentment than if made by a private citizen.

After your meeting last year in Montgomery, Governor Bibb Graves wrote a letter to Dr. Stuart Graves, which letter was published in the Montgomery Advertiser and probably other papers of the state and which letter reflected—

President Harrison: Dr. Hill, I am afraid you are out of order. You are not dealing with anything that comes under the head of unfinished business.

Dr. Hill: Personal privilege.



President Harrison: We can't deny that, but let's get to the point.

Dr. R. S. Hill: Certainly the President doesn't deny me the right—

President Harrison: Not the right of personal privilege, no, sir.

Dr. R. S. Hill:—that reflected upon the intelligence, upon the sincerity, upon the honesty of purpose and conviction of a large number of medical men of this State who became convinced as I was, that there was an effort to use the Health Department of the State to promote the Medical School in Alabama.

Now, as a mild expression of my deep-seated resentment, I simply wish to read to you some correspondence that took place between the Governor and myself on this matter.

I hate to detain you, gentlemen, but I think we are entitled to it. This is the Governor's letter:

"My dear Dean Graves:

"Acknowledging receipt of your letter of yesterday, I beg to state that Dr. J. N. Baker became legal Health Officer as ratified by the State Medical Association yesterday afternoon. This action automatically releases you from further legal responsibility and your bond should be transferred at once to Dr. Baker.

"Permit me as Governor to express on behalf of the State our appreciation to the University, to President Denny and to yourself for the splendid service you have rendered during the last few months. From my intimate and personal knowledge of conditions made available to me as ex officio chairman of the State Committee of Public Health, I wish to take this opportunity to record and to make public some facts in connection with recent events. It is a matter of record that the State Committee of Public Health on August 21, 1929, while you were on a vacation in North Carolina, and without knowledge on your part, unanimously elected you as Acting State Health Officer to serve without salary. President Denny responded to the unanimous request of the Committee by granting you essentially a leave of absence from the School of Medicine to meet what was represented to him as the emergency resulting from the unfortunate and unexpected illness of the State Health Officer. President Denny could have had only two motives in meeting this unanimous request of the State Committee of Public Health. One was his intense loyalty to the State and his ever ready desire to render a public service. The other was based upon his belief that the duties of Acting State Health Officer for a short time would offer an unusual opportunity for the Dean of the Medical School to become acquainted with the profession of the State, and so to learn at first hand the medical needs of the State, to the end that the University might meet those needs most intelligently."

President Harrison: Doctor, we will never have time to read all those—

Dr. R. S. Hill: I insist.

President Harrison: We are extending you time to make a personal statement, but I will put it to the house as to whether you will read it.

Dr. R. S. Hill: I am a little amazed at the President—

President Harrison: I am very sorry.

Dr. R. S. Hill:—to deny a member of this Association—

A Voice: I move, to expedite matters, that Dr. Hill be granted as much time as he needs.

A Second Voice: Second the motion.

President Harrison: Gentlemen, there is a motion before the house that Dr. Hill be allowed—how much time?

First Voice: As much as necessary. I make a motion he be granted the privilege of reading those papers.

Second Voice: Second the motion.

President Harrison: All in favor of dispensing with the afternoon program until Dr. Hill has finished that statement—

Dr. R. S. Hill: I object to the statement. We are not dispensing with the program.

President Harrison: All in favor of the motion as made by the gentleman will please rise. Mr. Secretary, will you count them?

Secretary Cannon: I count thirty.

President Harrison: All opposed will please rise.

Secretary Cannon: Twenty, Mr. President.

President Harrison: Dr. Hill, proceed. (applause)

Dr. R. S. Hill: Hon. William J. Bryan was wont to say that he could always trust the American people when they understood the truth. I feel that I can always trust the medical men of Alabama, with whom I have been associated for forty years, to do the right thing when they know the truth. (Applause.)

(Dr. Hill continues with the Governor's letter.)

"Before the annual conference of the County Health Officers last October, I said emphatically that I believed that one of the greatest single needs of Alabama was a high grade four-year medical school in which to train our young men and our own young women for medical service to the people of this State. Intimate contact with the affairs of the State Board of Health and careful study of the needs of the State have strengthened

this conviction on my part. This is not the time or place to go into details but I do want to state that the amount of money which is being carried out of the State by our own young men and young women, who are forced to complete their medical education elsewhere, is sufficient annually to pay the interest on principal funds necessary to build and equip a first class medical school and a modern teaching hospital, to employ a thoroughly competent faculty and still have some left for endowment. The reason for my statement—that I believed that one of the greatest single needs of the State was such an institution—is that the State Board of Health consists of the organized medical profession of the State and it must be obvious that continued progress in state health work is bound to depend upon the proper replacement of the medical profession of the State.

"In this respect, it should be clearly understood that there should be no encroachment by the University upon the authority and prerogatives of the State Board of Health or by the State Board of Health upon the University. They should be, and under the law must be, independent institutions, pursuing parallel paths, sympathetically cooperating with each other and coordinating their efforts, as you have often said, to the 'common end of improving the physical, mental and social welfare of our people'.

"The minutes of the State Committee of Public Health show that your resignation has been before that Committee since October 15, to be accepted at any time at the convenience of the Committee. The request of the Committee has been unanimously each time that you continue to serve as Acting State Health Officer until a State Health Officer could be elected and qualify in the regular manner.

"This simple statement of events, based on the official records of the State health office, are sufficient answer for any reasonable citizen to any allegation that the President of the University, or anyone connected with it closely or remotely, has had any other motive than the desire to render unselfishly and under embarrassing circumstances a service to the State, and to promote the plans for public health and medical education which were promulgated by the late Dr. Samuel Wallace Welch and which were in brief that the State Board of Health and the State University, always separate and independent of each other as two great state institutions, should harmoniously cooperate and effectively coordinate their work in two parallel paths.

"I am not unaware of the great personal sacrifice you have made and desire to express, not only for the State but for myself appreciation for the public spirited and most efficient service you have rendered."

Now, gentlemen, I will not detain you in trying to answer that letter, but if I am called upon to do so, I will have no hesitancy in answering it, because I feel that the strength of my position would be increased by revelations of conversations that took place between Governor Bibb Graves and myself. I simply call your attention to the

fact that that letter is filled with the earmarks of the studied shifts of a trained lawyer, such as is Governor Bibb Graves, to acquit of an offense someone who has been brought to the bar of justice.

Here is my letter to the Governor. My letter is rather short.

"Dear Governor:

"I am sure you did not intend to place me or my associates in an unfair position relative to the contest of the Health Department of the State just ended, but the latter part of your letter to Dr. Stuart Graves published in Sunday's Advertiser tends, in my opinion, to do this very thing.

"I feel we are 'reasonable citizens' and as such were convinced by evidence and circumstances that an excessive enthusiasm to build a four-year medical college at the University of Alabama was leading to, if it had not actually caused an unwarranted use of the powers and influence of the Health Department to further this purpose. The Medical Association in its election Friday, I think, supported our views in the matter and made it plain that there must be 'no encroachment by the University upon the authority and prerogative of the State Board of Health.'

"We were and are willing to let the matter rest with this verdict. I have no desire to make a post-mortem and review the case unless called upon to do so, but I feel that if an appeal to the public is taken through the public press that all the circumstances and evidence connected with the contest should be known. In view of your letter referred to, may I indulge the hope that you will make some announcement that will clarify the matter or give this letter the same publicity that was given your letter to Dr. Stuart Graves."

Was that a fair request?

(Dr. Hill continues reading)

"In our successful fight to break the powers that be I claim we were 'reasonable citizens' sincerely and honestly following our convictions, based upon evidence sufficient, in our minds, to move us to the actions we took.

"With kindest regards, I remain

"Yours very sincerely,

"R. S. Hill, M. D."

I did not hear from the Governor for some six days and then I dropped him this note:

"Dear Governor:

"Last Monday I wrote you a note regarding a letter you gave Dr. Stuart Graves which was published in the Advertiser. As I have not received the courtesy of a reply, I am wondering if my note reached you. Will you please advise me if it was received and if you are moved to take any action in the matter?

"With kindest regards, I remain

"Yours sincerely,

"R. S. Hill, M. D."



On May 6, 1930, I received this letter from Governor Graves:

"Your communication came to the office during my absence and I have been so overwhelmed with pressing matters that I am just now having the first opportunity to answer.

"I hope it is unnecessary to assure you that there was no intention of casting, in any way, any reflection upon the motives actuating you and your associates. If I in any wise cast any reflection it was entirely unintentional and is regretted.

"I think if you will read my communication you will see that I very pointedly stressed the idea that there 'should be no encroachment by the University upon the authority and prerogatives of the State Board of Health', and I also feel just as sure that there was no ulterior motive on the part of anyone connected with the University to further the interest of that institution, in any way, by encroachment on any other organization."

Now, this is my last reply:

"Dear Governor:

"Replying to your acknowledgment of the receipt of my note relative to your letter to Dr. Stuart Graves published in the Montgomery Advertiser, April 20th, may I remind you that a private balm does not heal a public wound, and may I assure you that I regret more than I can say that you seem inclined to leave me and all who share my views to our own devices to extricate ourselves from the unhappy position of unreasonable citizens in which you, as Chief Executive of the State, have placed us through no fault of ours, save that of exercising a right of opinion differing from that expressed by you.

"I feel deeply that my friends, and I, as public servants (medical men), deserved better at the hands of the Governor of our State than what some might call a gratuitous affront, but what I prefer considering an act of forgetting the feelings of and fairness to some of us in responding to an impulse to bolster up certain others—'The guilty flee when no man pursue'. The Governor may, as I feel he has, publicly disparage the intelligence and reflect upon the sincerity of men who, with myself, entertained the opinion that there was an effort to use the Health Department of the State to promote the interest of the Medical School at the University of Alabama, but no rhetorical effusion from the Governor can remove the stain of guilt from those to whom circumstances and events definitely point an accusing finger.

"I had hoped the election of April 18th, which was a complete triumph of the cause I had the privilege of espousing, would close the whole matter and soon be forgotten. It is especially to be regretted that the Governor, as I see it, has contributed towards preventing the healing of the wounds of that contest.

"If I were privileged to offer an opinion I would say Dr. Denny was unfortunately poorly advised or imposed upon, otherwise, he would have fared better and there would not have been the Waterloo on April 18th for those who fell victims to the charge of lending themselves to an endeavor to change the Constitution and use the health organ-

ization of the State to promote the Medical School of Alabama.

"I need not say I was gratified at the result of that election and that those who were placed in official positions received my undivided support, and are my warm personal friends in whose success I rejoice; nevertheless, paradoxical though it may seem, I cannot find it in my heart to rejoice at the defeat of members of the Board who have been my close personal friends for more than a quarter of a century. They thought they were right. I thought I was right. The Association supported the views I entertained, and I hope and believe they feel, as I do, that there was nothing personal involved.

"With kind regards, I remain

"Yours very truly,  
"R. S. Hill, M. D."

That closes the correspondence and, gentlemen, I am simply offering it as my protest against what I consider an unjustifiable reflection of the Governor upon a large number of the medical men of this State.

Now, I come to a disagreeable—another disagreeable task. I am advised that Dr. Denny made some severe strictures before the annual dinner last night of those of us who entertained the view that the Health Department was being used to promote the Medical School. He denounced it as false, and he stated, so I am advised, that Dr. Stuart Graves while serving as State Health Officer did not receive a penny outside of his salary from the University of Alabama. I wonder if Dr. Denny knew that while acting as State Health Officer Dr. Stuart Graves, the dean of the Medical School at the University, advocated making the State Health Officer and the Dean of the Medical School one and the same, and I need not tell you that this information came to me, for I am in position to tell you that he told me this himself. And I wonder when Dr. Denny said that Dr. Stuart Graves, as has been first stated, drew not a penny outside of his salary,—I wonder if he knew that Governor Bibb Graves had agreed and did give him from two hundred and fifty dollars to three hundred a month extra to pay his personal expenses while in Montgomery?

Yes, I join you, Dr. Denny. Let's put the cards on the table and from now on let's deal above board.

"In ways that are dark and tricks that are vain, let others and not ourselves explain."

I thank you.

President Harrison: Gentlemen, I refuse to recognize anyone until I can make a statement. I am going to recognize myself. (Applause.)

I am sorry; I am sorry. I did not know anything about this statement to be made and having been made, it looks like I have been extremely discourteous.

The one resolution uppermost in my heart last year was to heal a breach in which I had been a very earnest fighter and for which I have no apologies. Now, today, it looks very embarrassing. I say frankly I didn't know anything about—I had no information whatever that this matter would be brought before the Association; but as it has been it is necessary for me to make a very frank statement, in order for it to become clear that I have been trying to do the very fairest and best thing to get rid of friction.

Ten days ago I had a very nice letter from the President of the University, calling my attention to the fact he had heard rumors of certain talk that was made with reference to the part the University had, or was supposed to have taken, or was thought to have taken in this matter and asking me to make a statement of his position to the Association. He wrote me a very nice letter. He said he regretted it extremely; that that sort of a rumor would do the University harm. I answered the letter in kind and declined to make the statement he requested. I did say that I was very sorry if there were any rumors afloat; that they were bad for the University and were equally bad for the State Department of Health, and for me to make any statement as he requested would precipitate possibly a discussion and might stir up some feeling, might stir up more trouble, and I declined his request to make any statement and told him it would not come before the Association.

I had a letter from him today in which he said he thought I had chosen wisely and that he appreciated the spirit which prompted my action.

I thought it necessary to consume these five minutes, otherwise it would appear I had declined to follow the suggestions in Dr. Denny's letter, and had declined to give opportunity for his statement.

Gentlemen, we get terribly mixed up. Do you remember the remark made by the

great Mississippi Senator, when he stood by the bier of Summers, the great Massachusetts statesman, whom he thought had been so unkind and unjust to the South? There lay Summer's body in a magnificent casket and someone asked L. Q. C. Lamar to make a few remarks. I wish I could quote it but I can't, but essentially he said, "Gentlemen, we have been far apart; we have all been honest; we have all done what we thought was the best. Some of us have talked too much; many of us have felt too much. May God let us come together. As we know each other better, we will love each other more."

Thank you. (Applause.)

Dr. J. S. McLester: Like Dr. Harrison, I am sorry that it is necessary to bring this discussion before you, and it embarrasses me to speak at this time.

President Harrison: Doctor, this isn't open for discussion at all. You are talking from personal privilege.

Dr. J. S. McLester: Yes, from personal privilege. Indeed, Mr. President, I rather suspect that I am the prisoner at the bar, defending himself against he doesn't know just what.

I am sorry that the Governor, as Dr. Hill seems to think, appears to have slighted him, and I am sorry too, that Dr. Hill has found it necessary to bring this correspondence before you. May I recite just a little history? When Dr. Cannon became ill and it was necessary to secure a pro tem health officer to fill the gap, a committee consisting of Dr. Partlow, Dr. Harper, and myself was appointed by Dr. Hill, then acting chairman of the board. This committee surveyed the field without success, and when we met in Montgomery Dr. Partlow proposed to me that we ask President Denny to lend to the Board Dean Graves of the Medical School. We first talked this over with Dr. Hill the following morning at the Jefferson Davis Hotel and he agreed, without objection. Dr. Partlow thereupon offered this proposal to the Board of Censors; with the approval of those present he telephoned Dr. Denny and made the request. Dr. Denny generously said "yes." It was in this way, to meet an emergency, that Dr. Graves became acting State Health Officer pro tempore.

There then followed, I am told, a whispered campaign of innuendo attributing



sinister designs to the University of Alabama. I am an alumnus of the University and a member of its faculty, although contrary to what is being whispered, I draw no salary. I am loyal to the University, intensely so, but I yield to no man in loyalty to this Association. There is no conflict between the interests of the University of Alabama and the interests of the Medical Association of the State of Alabama. We have wanted to see a four-year medical school in Alabama and I have worked very hard toward that end, but so far it has been merely a dream. It is being whispered, I am told, that the University hopes to use the influence of this Board in determining the final location of this school. This is preposterous. If you know anything of the State's finances today, you will know, as I do, that there will be no four-year medical school in Alabama in the next quadrennial period. The University takes great pride in the achievements of this Association and has a patriotic interest in its welfare but it asks for nothing but your friendship and goodwill.

Dr. R. S. Hill: Mr. President, I feel I am entitled to a reply.

President Harrison: I deny you the privilege unless the Association will extend you the privilege as it did before. I think we ought to stop this discussion and proceed with the program. I did all due courtesy to you, Dr. Hill—

Dr. R. S. Hill: I won't insist. I will withdraw my request.

President Harrison: Thank you, Doctor. Let me remind you of what I said about Lamar's speech. These little differences are not so important. We get stirred up and drive and drive and make a great to do, but the thing for us to recollect is to be better doctors and to stand a solid phalanx against this insidious effort that is being made through hired agencies to turn us over to the life insurance companies. It is a much bigger thing than any of you know anything about.

### *Scientific Program*

Dr. M. Barfield Carter, Birmingham, presented a paper entitled "Deep Seated Diverticula of the Oesophagus".

Films on eclampsia and cancer concluded the afternoon program.

### Evening Session—Thursday, April 23

The Association was called to order at 8 p. m. by President Harrison.

Dr. D. G. Gill, Montgomery, read a paper "Screening as a Weapon Against Malaria". The paper was discussed by Drs. W. A. Stanley, Enterprise and Douglas L. Cannon, Montgomery.

Dr. T. F. Huey presented a paper on "Tularemia of the Eye—Report of Case". It was discussed by Dr. H. B. Searcy of Tuscaloosa.

Dr. W. M. Cunningham of Corona presented a paper entitled "What the Young Doctor Should Know". It was discussed by Dr. E. P. Lacey, Bessemer.

Dr. E. S. Sledge moved that Drs. Cunningham and Lacey be given a rising vote of thanks. Amid applause the assembly stood for a moment.

Dr. W. S. Hannah of Montgomery read a paper on "The Etiological Diagnosis and Treatment of Four Cases of Heart Disease". The paper was discussed by Dr. H. M. Simpson, Florence and Dr. Lewis of Birmingham.

Dr. T. D. Rivers, Montgomery, presented a paper entitled "The Early Diagnosis of Tuberculosis".

Dr. S. B. McPheeters, Montgomery, in continuing the symposium on tuberculosis, dealt with "Home Treatment".

The papers of Drs. Rivers and McPheeters were discussed by Drs. Auston, Russell and Greet.

The scientific program of the Sixty-Fourth Consecutive Annual Session having been concluded, the Secretary moved that a rising vote of thanks be extended President Harrison for the very excellent papers which had been presented. The assembly arose.

Whereupon the meeting adjourned until 8:30 a. m., Friday, April 24.

(The Proceedings of the Association will be concluded in the October number.)

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The Sixty-Fifth Consecutive Annual Session of the Association will convene in Mobile, April 19-22, 1932.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### THE COLLEGE OF COUNSELLORS

J. N. BAKER

Life Counsellor of The Medical Association of the State of Alabama

The writer, at the legislative session of our Association recently held in Birmingham on the last day of the annual meeting, was forcefully impressed by the large number of youthful men engaged in the serious task of shaping and directing our legislative policies. No doubt could be entertained as to the enthusiasm, the zeal and warmth manifested in these deliberations. The one doubt which, ever and anon, would surge through the writer's mind was: Have these younger men a proper understanding and a comprehensive grasp of the logic and complexities woven into this, their scientific association, and, by virtue of which, they become the architects and the moulders of the health policies of their State? The average, highly technical young physician of today seems somewhat loath to seriously concern himself with a mastery of certain cardinal facts inherent in this organization, which perforce, makes him an integral part of the public health system alike of his county and of the State. His voice can and should be heard in the deliberations of both his County Society and of the State Association, not only on matters pertaining to pure science, but also on matters of public health. In this way, and in this way only, will he gain the right concept of the relations existing between himself, the organized profession and the machinery through which health activities are conducted. True it is that his responsibilities to the public are measurably increased because of this relation; his reward, however, is to be had in the exceptional confidence manifested and the unusual power granted organized medicine by the legislature and the people. Cochran, the creator of this system, was, in no wise, unmindful of these responsibilities; but his faith was unshakable in the loyalty, the willingness and the ability of a united and properly organized

medical profession to produce the necessary leadership from within its own ranks. In this regard, he ran far ahead of his time; he quickly grasped what, to-day, is an accepted fact, that such leadership in public health affairs should vest in the medical profession. To this precocious vision of Cochran must be attributed much of our success and the ease with which we have been able to outstrip other states in public health organization.

For us in Alabama, who, since 1873, have been conducting all health activities on the county unit basis, the recent earnest preachments by the Governor and Health Commissioner of New York, for the adoption of just such a plan, have more than a passing interest.

Cochran, before presuming to saddle so great a responsibility upon an organization primarily scientific in structure, carefully thought his problem through. If responsibility for work of an important legal nature were to be assumed in every county in the State and for the State at large, then surely there must be trusty lieutenants within the organization upon whom to lean and, so placed along the firing line, as to insure adequate leadership and safety. He, therefore, proceeded to create within this scientific group, a specialized group with a limited membership of one hundred, whose attainments, fealty and willingness to serve and to sacrifice were unquestioned. In this manner and for these reasons arose the College of Counsellors within the Association, whose existence, without these responsibilities, could find no possible justification; but with them, finds ample justification.

Note the constitutional requirements for *qualification* in this particular group:—

- (a) Liberal culture.
- (b) Fidelity to the system of organization.
- (c) Devotion to scientific and practical medicine.
- (d) A service of at least five years in a County Medical Society.



And more important still, the *duties* imposed upon the members of this particular group:

(a) To render unqualified and unstinted allegiance to the Association and to stand ready at all times to support its announced policies and to aid in the achievement of its objects.

(b) To attend at least one annual session of the Association in three.

(c) To attend the meetings of their respective county societies regularly and to uphold the authority and promote the efficiency and power thereof.

(d) To pay into the treasury of the Association dues amounting to \$10.00 annually.

And, finally, the *rights* granted members of this group, under the original constitution, were as follows:

(a) To vote on all questions brought before the Association.

(b) To be eligible for the offices of the Association.

By constitutional amendment, in 1922, Article IV, Section 4, the rights of Counsellors as set forth in (b) were abridged to the extent of permitting *any member* who had been a member of a County Medical Society for *five* years to be eligible to the offices of the presidency and vice-presidencies. This question will be dealt with again a little further on.

It is thus seen that the *qualifications* required for membership in the College of Counsellors are stringent and away from mediocrity; the *duties* imposed are clear-cut and exacting, both of time and money; the *rights* bestowed—even the original, unabridged rights—but the reward of service faithfully and loyally performed. Through such a group one readily sees that not only should the essential elements of *fidelity* and a *willingness to serve* be furnished, but also the important factors of *coherency*, *permanency* and *stability*, so needed in the performance of our legal obligations. One learns to legislate by legislating, much as one learns to write by writing. Solonic traits are evolved through long legislative training and experience rather than from inherited gift. Few will be inclined to question the statement that the business of both federal and state legislatures would be more efficiently and expeditiously dispatched, if their various memberships had

been adequately schooled to cope with the tasks confronting them. To entrust so delicate and complex a piece of machinery as the State Health Department of Alabama to inexperienced hands would be to court disaster. So long as the organized profession has the responsibility, as it now has, of directing all public health activities, this tower of strength within it—The College of Counsellors—should never be weakened nor abolished; on the contrary, it should be fortified and bolstered. Should the time ever come when the direction of public health affairs passes to other hands, then with such passing, should also pass the College of Counsellors; the important work for which it was originally created, will then cease to exist.

Therefore, does it not logically follow that the ambition to become a member of the College of Counsellors is not only laudable and commendable, but should be viewed as the first objective by the interested member? The restriction in numbers should make the prize all the more coveted. It would seem that the constitutional amendment of 1922, above referred to, whereby others than Counsellors are now made eligible to certain offices of the Association, would tend to thwart ambition to gain membership in the college and, to this extent, weaken its powers. While the writer is quite mindful of the arguments advanced in defense of this change, yet the thoughtful student of our system can hardly escape the conviction that by such action violence was done the logic and philosophy which permeates the machinery of this unique organization.

For the present and the future the line of policy which the Association ought to pursue, and which under the guidance of wise and prudent counsels it is to be hoped it will pursue with a resolution that shall never falter, stretches out before us so plainly marked that it will be our own fault if we fail to find it and to walk in it. And what that wise policy dictates is this: Not to weary of well doing; to continue in the same spirit and according to the same methods that have heretofore controlled our action, the work that has been so favorably begun; to seek always the public good and not our own; and always to recognize the great principle that union and organization involve strength and permanence and lead on from conquest to conquest, while the assertion of individual rights and privileges, and the gratification of personal jealousies and ambitions are always the agents and instruments of disintegration and defeat.—*Report, Board of Censors, M. A. S. A. 1882.*

## DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF ADMINISTRATION

J. N. Baker, M. D.  
State Health Officer in Charge

#### THE INTEGRATING UNIT

One of the important duties of the administrative officer of any far-flung organization such as the State Department of Health, with its fifty-four health units, is to establish and maintain intimate, cordial, and stimulating relations between the entire personnel of each unit and the forces working from the central office. In the absence of such relationship, it becomes quite easy for the *esprit de corps* of the field workers to languish and to be supplanted by a feeling of indifference or of possible resentment at "official meddling". The prime function of the central staff is, first, to carefully study and work out definite plans and policies which must be basically sound and, in large measure, applicable to all units; and, secondly, to render every possible aid to the field forces in seeing that such policies are put in effect. Such service can, and should be, rendered with no show or semblance of effort at "bossing the job", but with the sole aim in view of lending a co-operating and sympathetic hand. The problems confronting health workers are many, profound and complex, and call for "teamwork" of the first order. In no other endeavor is coordination of effort, tying-in to the health unit all agencies both official and volunteer, of more importance. And just here is where it is felt that the "Integrating Unit", recently launched from the central office, should serve a most helpful purpose. The personnel of this unit embraces members who have had large and extensive experience both in problems of field work, as well as a familiarity with the policies and practices of the central administration. A week's sojourn, as is planned, of such a unit in each county should go far towards properly evaluating, unifying and integrating all health activities engaged in, with the result of measurably increasing the efficiency and output of such unit.

The administrative staff recognizes the important responsibility of aiding its field forces in all possible ways in their many difficult tasks, and sends them this "Inte-

grating Unit" with the one thought in mind of enhancing their productivity. In such a spirit it is hoped they may be received.

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### THE ALABAMA FIELD TRAINING STATION

Contributed by A. H. Graham, M. D., Director of the Station

Provision has been made for the training of new personnel in Alabama for the past eight years. With the expansion in the number of organized county health departments and a demand for service of high quality, such a provision has been an absolute necessity. Many modifications have been made in the type of organization, program for training, selection of personnel, educational entrance requirements, etc. Each change made has been for the improvement of health service and is based on facts elicited through practical field experience.

On July 1, 1930, a new station with a new staff was opened in Opelika. The personnel consists of a director, a county health officer, a directress of nurse training, a county health nurse, a chief sanitary inspector and one assistant inspector, a secretary and also a full-time graduate veterinarian. This set-up functions as a county health department with all personnel participating in the programs of training and field work.

The personnel to be trained is selected by the State Health Department and each applicant personally interviewed. Health officers, nurses, sanitary inspectors, secretaries and other special personnel are all sent to the training station. A new course is started every two months and with few exceptions each group receives a full eight-weeks' period of instruction, which is composed of lectures, round-table discussions, demonstrations and actual field practice.

The particular objective is to select only those who show special aptitude in public health work. Many who come are not particularly fitted for such an educational field of endeavor. If those who are fundamentally qualified to do health work acquire a vision of the broadness, and extreme value of the field of disease prevention and become sufficiently interested to work, study and apply this new knowledge in actual



practice, and know thoroughly the health and medical organization of Alabama with its policies and practices, then the value of a training station is assured. This we know to be the case and hope through this medium to some extent to develop high type personnel and greatly improve health practices in the field.

The training station is assigned a four-fold function namely:

1. Training of new personnel.
2. "Refresher" courses for employed personnel.
3. To develop improved health practices for field use.
4. To carry on special epidemiological work on a specific problem or problems.

The second and third functions will be gradually carried out over a period of time, some progress already having been made during the past year.

The fourth function of epidemiology is being fulfilled and will be expanded at an early date. The particular study under way at present is that of toxoid administration for diphtheria prevention, its efficiency, dosage and intervals. The findings will be prepared for publication in the near future. A special tuberculosis study is contemplated and should, if instituted, be of great value not only to Alabama but to other states as well.

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## BUREAU OF LABORATORIES

L. C. Havens, M. D., Director

### DIPHTHERIA TOXOID

#### Its Administration and Advantages.

Ramon, in 1923, was the first to demonstrate, in a practical way, that diphtheria toxin is rendered non-toxic by the action of formalin without loss of its antigenic properties. He called the resulting non-toxic product "anatoxin", but in this country it is commonly known as toxoid. In 1926, the Connaught Laboratories<sup>1</sup> began its use and in the past few years, in this country, toxoid has increasingly displaced toxin-antitoxin as an immunizing agent against diphtheria.

Diphtheria toxoid is made from the undiluted toxic broth in which the diphtheria bacillus has grown until a very potent toxin

is produced. In order to be satisfactory for toxoid, the broth must contain 300-500 M. L. D. per cc. The M. L. D. of the toxin manufactured in the Alabama State Laboratories averages 1/700 cc. The broth is filtered thru Berkefeld candles to remove the bacilli and 0.4% formalin is then added. After incubation at 37 C. for four to six weeks the toxin has been altered to the non-toxic toxoid to such an extent that 5 cc. will not kill a guinea pig. This altered toxin, tho non-toxic, stills retains antigenic properties. It is then tested in guinea pigs, both for toxicity and immunizing power. Five guinea pigs are given 5 cc. each and all five must remain alive, without loss of weight, for four weeks. Five guinea pigs are injected subcutaneously with 0.5 cc. At the end of four weeks all five must resist 5 M. L. D. of diphtheria toxin.

Numerous observations have demonstrated the superiority of toxoid. Among these are Harrison<sup>2</sup> who obtained 95% immune following toxoid, as compared with 64% in a similar group, following the routine administration of toxin-antitoxin. Rhoads<sup>3</sup> obtained similar results in immunization of nurses at the Cook County Hospital in Chicago. Immunity in 95% of 97 Schick positive children at the Baptist Orphanage in Troy was obtained with the toxoid manufactured by the State Board of Health. Three injections of toxoid were used at weekly intervals. Over a million doses have been distributed by the State Board of Health in Alabama.

Toxoid has certain other advantages in addition to its superior immunizing value: (1) it is practically non-toxic; there is no danger of incomplete neutralization of toxin, as in toxin-antitoxin; (2) it contains no foreign serum; (3) it is cheaper and easier to make.

There is still some difference of opinion regarding dosage and methods of administration. The practice of two doses of 1.0 cc. each at intervals of 3-4 weeks is widely recommended and practiced. We have always recommended three injections of 1.0 cc. at intervals of 7-10 days. We know that

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(1) Moloney, P. J. *Amer. Journ. Publ. Health*, Dec. 1926, p. 1208.

(2) Harrison, W. T. *Publ. Health Reports*, Aug. 15, 1930.

(3) Rhoads, Paul S.: *Journ. Amer. Med. Assn.* July 15, 1931, Vol. 97, p. 153.

this produces adequate immunity in at least 95%, while there is growing uncertainty regarding the adequacy of two injections. Thus Zingher<sup>4</sup> obtained 98% immunity with three doses, 86% with two and 60% with one. Park<sup>5</sup> states that with the very best preparations as many as 90% may be immunized with two doses, given at an interval of one week, but if three doses were given, this figure would be raised to 97-98%.

The ideal age at which to administer toxoid is from six months to one year. Infants and young children never have severe reactions and they are then immune before they reach the age period which has the highest death rate (1-5). Children over eight and adults should always be Schick-tested prior to toxoid administration, for two reasons: (1) a large proportion are already immune and (2) the likelihood of severe local or general reactions increases with age. Greengard<sup>6</sup> immunized with toxoid 145 infants, varying in age from newborn to two years, with no severe reactions. Of 100 of these who were Schick-tested following the injections, only two were positive.

Immunizations against diphtheria and typhoid are sometimes carried out simultaneously. There is no contraindication to this convenient practice in young children, but the two vaccines should not be administered at the same time to adults, due to the danger of severe reactions. Furthermore, the majority of adults are already immune to diphtheria; it is, of course, wasted effort to give toxoid to a person who is already Schick-negative.

The State Board of Health is prepared to supply physicians and health officers with toxoid of a high potency for use in preventive inoculations. It is urged that more use be made of it among pre-school children. If a child is not immunized against diphtheria until he starts to school, he has already passed the most dangerous age period. For the reasons stated above the State Board of Health recommends three doses of 1.0 cc. each at intervals of one week.

(4) Zingher, A.: *Proc. Soc. Exp. Biol. & Med.* 1925, 22, 462.

(5) Nelson's *Loose-leaf Medicine: Survey of Literature*, 1930, p. 471.

(6) *Journ. A. M. A.* 1931, 97, 229, (July 25).

## BUREAU OF VITAL STATISTICS

W. T. Fales, Director  
Ethel Hawley, Acting Director

### A COMPARISON OF DEATH RATES IN ALABAMA FROM CERTAIN CAUSES, FOR 1917, 1925-29, AND 1930.

It has now been six years since Alabama was admitted to the Registration Area for Deaths and some comparative statistics are timely.

In 1917 death registration seems to have been more complete than for any of the earlier years, although the certificates were not so completely filled out and the cause as given probably not so reliable as at present. We have gone over these certificates and reclassified them to make them comparable with the later figures. A comparison of the rates for certain diseases for 1917, for the five year average of 1925-1929, and for 1930, is interesting and shows some of the results of public health work, particularly as to communicable diseases. The story as to degenerative diseases is not so encouraging.

The most striking reduction has been in typhoid fever, which shows in 1930 a reduction of 80 per cent over 1917. Intestinal diseases in children under two years of age, which includes dysentery and diarrhea and enteritis, show a reduction of 55 per cent. In 1930 there were 52 per cent fewer dying from malaria than in 1917 and 35 per cent less from tuberculosis.

On the other hand, deaths from puerperal causes have shown practically no change in rate, while cancer and the degenerative diseases have shown a more or less constant increase. Heart disease of all forms heads the list with an increase of 87 per cent. Cancer shows an increase of 49 per cent and nephritis an increase of 34 per cent. Automobile accidents showed the most alarming increase, being 786 per cent more than in 1917, while other accidents showed a decrease of 32 per cent.

One of the most gratifying decreases was in the number of certificates on which the cause of death was ill-defined or not stated. As evidence of the improved quality of the death certificates at the present time, this classification was 28 per cent less in 1930 than in 1917.

The following table shows the rates for the most important causes of death.



A Comparison of Rates from Certain Causes for 1917, a Five Year Average (1925-1929) and 1930. Rates Per 100,000 Population.

Cause	1917	1925-1929	1930
All Causes	1295.9	1171.2	1146.6
Typhoid Fever	40.1	12.2	7.9
Malaria	25.5	10.5	12.2
Diphtheria	8.1	8.7	7.1
All Respiratory Diseases	163.6	207.4	130.6
Tuberculosis (all forms)	131.8	90.9	86.0
Cancer (all forms)	36.0	48.7	53.8
Pellagra	46.9	22.1	23.9
Diabetes	4.3	8.3	8.8
Cerebral Hemorrhage and Paralysis	54.7	74.0	74.8
Diseases of Heart	71.7	116.6	134.0
Intestinal Diseases			
Under 2 years	71.3	66.8	32.6
2 years and over	41.4	13.2	13.4
Nephritis	75.1	89.8	100.4
Puerperal Causes	22.2	21.8	21.3
Auto Accidents	2.1	13.4	18.6
Other Accidents	68.9	56.5	47.0
Cause Ill-defined or Not Stated	123.0	96.6	88.1

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### A RESUME OF ACTIVITIES AND RESULTS

The control of communicable diseases is one of the prime functions of all health departments. The first requisite in control is the knowledge of when and where such diseases are occurring. This demands a proper functioning system of obtaining and analyzing reports as to the occurrence of diseases. With this knowledge it is possible to intelligently plan control of the present situation and the best means of prevention of future outbreaks.

During the past four years there have been no major epidemics of preventable diseases in the State with the exception of a nation-wide epidemic of influenza and of a sharp increase in malaria incidence during 1929. Typhoid fever which has always been an important cause of illness and death decreased from 1985 cases with 319 deaths in 1927 to 867 cases and 209 deaths in 1930. Diphtheria during the same period fell from 2527 cases to 1594 cases and the deaths decreased from 347 to 183. Smallpox has not been prevalent since 1925 although a few cases continue to occur. In-

fantile paralysis and meningitis tend to occur at intervals and demand prompt action. Undulant fever has made its appearance within the State and is demanding a solution of its problems.

Tuberculosis takes an annual toll of about 2200 people—the majority of these in early adult life at a time when they should be of most value to the State. Investigation of many of these deaths has shown that the case had not been diagnosed as tuberculosis until just before death. A diagnosis at this time does not offer much hope as the disease is too far advanced to permit of cure. Tuberculosis if discovered early can be cured, so early diagnosis is one of the big objectives of the health department's program. Two travelling diagnostic clinics were initiated on January 1st, 1931, and have already proven their value. During the first three months of this year they examined 1057 patients, of whom 363 were diagnosed as tuberculosis and a further 190 classified as "suspicious". 302 of the 363 actual cases had not been previously reported as cases, so that these clinics are enabling them to face the fact that they have tuberculosis and take the necessary treatment.

It has been estimated that there are between 20,000 and 25,000 cases of tuberculosis in the State. The health department is trying to find as many of these as possible and not only get them under treatment but also to protect their families and friends from infection.

Venereal diseases are another big problem in any state. Syphilis and gonorrhea not only cause untold illness but also are important causes of death. Syphilis is truly hereditary and infects many of those babies that it does not kill before birth. Treatment is an important part of the program of prevention as treatment will render the case non-infectious. In conjunction with various counties and cities the State Department of Health maintains fifteen clinics for the indigent patients and assists 190 other physicians with the problem of venereal diseases in their communities. In 1927, 115,000 treatments were given and in 1930, 158,000 were administered. A study amongst 3500 rural negroes has shown that approximately one-third of them have syphilis, so the extent of the problem in the State is obvious.

The question of child health is an important one and in recent years defective teeth have assumed an important role in the causation of disease.

A division of oral hygiene was organized on January 1st, 1928 to work in conjunction with the dentists of the State in a program amongst school children. Early surveys showed that this program should be chiefly educational so efforts have been directed towards teaching care of the teeth to school children and to teachers of children. As a result of this work a vast number of defects have been corrected and many schools have had all corrections made but the prime objective is the teaching of proper care of the mouth and through this medium prevention of disease.

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## BUREAU OF INSPECTION

C. A. Abele, Director

### FLUID MILK CONSUMPTION IN FORTY-FIVE ALABAMA COMMUNITIES

It is generally conceded that the ideal diet should include one quart of milk a day, in some form or other. Although accurate and complete data are very difficult and costly to obtain, the statement that the average per capita consumption of milk in the larger cities of this country is about one pint per day, and that in Southern communities it is two-fifths pint per day, is generally accepted.

Milk enters the diet in so many forms, including cream, butter, buttermilk, cheese, powdered, condensed, and evaporated milk, ice cream, and in cooked and prepared foods, such as bread, cake, puddings, candy, etc., that it is extremely difficult to determine the quantity of milk any particular individual consumes during a year, and more difficult to determine the average per capita consumption in a community. Investigators sometimes undertake to determine the consumption of 'fluid milk', including in this category only the whole milk, sweet cream, and buttermilk sold by dairymen and milk plants. But some of this milk no doubt is manufactured into ice cream or used in cooking and baking. Other investigators include one or more of the products of milk above named.

In addition to the variations in the products included in the determinations by different investigators, there is always the difficulty of obtaining accurate data concerning the volume of the products included. Milk plant operators generally have accurate records of sales, but this is not generally true of dairymen. The latter frequently are uncertain concerning the number of cows they are milking, their average daily production, and their daily sales. Production and sales are not always synonymous. Furthermore, both production and sales vary seasonally throughout the year, and daily sales figures at any particular time do not represent an average for the entire twelve-month; nor do consumption figures obtained in house-to-house surveys represent an average for the preceding or current twelve-month.

The entire consumption of fluid milk and such of its products as are to be included having been estimated or determined, it becomes apparent that the population figure to be used in determining per capita consumption is a very important factor in the final result. If the determination is made during decennial years the problem is quite simple, for the U. S. Census Bureau population figures may be used. But during other years estimates must coincide as nearly as possible with the actual population. Estimates used to advertise or boost a town are likely to be high, and to react unfavorably upon the per capita milk consumption figure. Population figures must also include residents in thickly settled areas beyond the actual city limits (which are not included in city census figures), because milk included in the city sales figures has been sold in these areas.

It is evident, therefore, that unless a standard and uniform method of determining 'per capita consumption' has been followed, or unless the products included are distinctly named, comparison of the resultant figures is useless.

But, for certain Alabama communities, data have been collected in a uniform manner, making comparisons of fluid milk consumption in these communities possible and logical. During the summer of 1926, when health surveys of eighteen Alabama towns were made by Harvard Medical School students in training at the International Health Training School for Health Officers,



it was found, by actual house-to-house canvasses, that the average per capita consumption of fluid milk and buttermilk in sixteen of these towns was 0.95 pint per day (See Public Health Reports, November 9, 1928, pp 2955-2957). These sixteen towns were: Alexander City, Andalusia, Auburn, Poligee, Calera, Camp Hill, Clanton, Clayton, Dadeville, Eutaw, Fort Deposit, Goodwater, Lafayette, Opelika, Pell City, and Tallassee.

Data concerning the milk production and sales of the dairymen and milk plants of forty-five Alabama cities being available, over periods varying in length from one to seven years, comparison of per capita consumption of fluid milk, cream, and buttermilk consumed in these forty-five cities during 1930 can be made now. Ratings of the milk supplies in these cities are routinely made at three-months intervals; therefore, the production and sales figures of four seasons of 1930 are available for the determination of average daily figures. The populations were determined by the Census, as of April 1, 1930.

In Alabama communities, however, the commercially produced milk represents only a portion of the total volume consumed, because numbers of householders keep cows for the production of milk for home use. No average daily consumption figures can approximate accuracy unless "family cow milk" figures are taken into consideration. Consequently, house-to-house surveys and estimates of dairy inspectors, tuberculin testers, and health officers have been resorted to for the collection of data pertaining to the volume of milk so produced and consumed.

In the following tabulations no pretense to absolute accuracy is made. Many of the factors alluded to above have been entered into every estimate and determination. It may be assumed, however, that inaccuracies have balanced on both sides of all equations, and that, relatively, the figures are approximately correct. For instance, there is little doubt of the fact that the per capita consumption of fluid milk in Moulton is approximately four-fold that in Mobile, and that the consumption figures for Montgomery and Mobile are approximately parallel.

For the purpose of facilitating comparisons, the forty-five communities have been grouped according to populations:

## PER CAPITA MILK CONSUMPTION 1930

TOWN	Popu- lation	Average Daily Consumption— Gallons				Con- sump- tion Pt./cap. day
		Com- mercial	Private	% Com- mercial	Total	
Population under 1,000						
Flomaton	915	55.0	30.0	64.7	85.0	0.74
Linden	982	21.5	53.0	28.8	74.5	0.61
Moulton	639	15.0	139.0	9.7	154.0	1.93
Parrish	987	43.0	130.0	24.8	173.0	1.40
Stevenson	733	60.0	32.0	65.2	92.0	1.00
Total	4256	194.5	384.0	33.6	578.5	1.09

Population—1001 to 5,000						
Albertville	2716	69.0	184.0	27.3	253.0	0.74
Athens	4238	144.0	284.0	33.6	428.0	0.81
Atmore	3035	140.0	50.0	73.7	190.0	0.50
Auburn						
A. P. I.	4513	179.0	300.0	37.4	479.0	0.85
Boaz	1691	69.5	164.0	29.8	233.5	1.10
Brewton						
E. Brewton	3820	130.0	160.0	44.8	290.0	0.61
Bridgeport	2124	61.0	94.0	39.3	155.0	0.58
Carbon Hill	2519	73.0	80.0	47.7	153.0	0.49
Cordova	1830	103.0	90.0	53.4	193.0	0.84
Cullman	2786	191.0	70.0	73.2	261.0	0.75
Demopolis	4037	123.0	201.0	38.0	324.0	0.64
Guntersville	2826	85.0	196.0	30.2	281.0	0.79
Hartselle	2204	86.0	50.0	63.2	136.0	0.49
Opp	2918	87.0	100.0	46.5	187.0	0.51
Red Bay	1279	20.0	75.0	21.0	95.0	0.59
Russellville	2146	107.0	200.0	34.8	307.0	0.78
Scottsboro	2304	85.0	120.0	41.5	205.0	0.71
Tuskegee						
Tusk. Inst.	4736	205.0	195.0	51.2	400.0	0.67
Un. Springs	2785	78.0	250.0	23.8	328.0	0.91
Wetumpka	2357	73.0	82.0	47.1	155.0	0.53
York	1796	55.0	100.0	35.5	155.0	0.69
Total	59750	2163.5	3045.0	41.5	5208.5	0.70

Population—5001 to 10,000						
Andalusia	5154	193.5	300.0	39.2	493.5	0.77
Eufaula	5208	125.0	250.0	33.3	375.0	0.58
Jasper	5313	270.0	225.0	54.5	495.0	0.74
Opelika	6156	277.0	100.0	73.5	377.0	0.49
Sylacauga						
Gantt	7064	461.0	486.0	48.7	947.0	1.07
Mignon						
Talladega	8492	426.0	372.0	53.4	798.0	0.75
Troy	7292	358.0	246.0	59.3	604.0	0.67
Total	44679	2110.5	1979.0	51.6	4089.5	0.73

Population—10,001 to 50,000						
Anniston						
A. M. I.						
Barber						
Mem. Col.	24063	1646.5	825.0	66.6	2471.5	0.83
Hob'n City						
Oxford						
Decatur	15593	512.0	400.0	56.1	912.0	0.47
Dothan	16046	501.0	550.0	49.1	1051.0	0.54
Florence						
S. N. S.	12340	382.0	275.0	58.1	657.0	0.43
Gadsden						
Ala. City	41041	1947.0	1000.0	66.1	2947.0	0.57
Attalla						
E. Gadsden						
Huntsville						
Mill Villages	30000	913.5	660.0	58.0	1537.5	0.42
Lanett						
Langdale						
Shawmut	10182	285.0	150.0	65.5	435.0	0.34
Selma	18012	922.0	298.0	75.6	1220.0	0.54
Sheffield						
Tusculumbia	10754	460.0	440.0	51.1	900.0	0.67
Tuscaloosa						
University	24159	1487.0	400.0	78.8	1887.0	0.62
Total	202190	9086.0	4998.0	64.5	14084.0	0.56

Population over 50,000

TOWN	Population	Average Daily Consumption—Gallons				Consumption Pt./cap. day
		Commercial	Private	% Commercial	Total	
Mobile	68202	4359.0	50.0	98.9	4409.0	0.52
Montgomery	70329	3875.0	945.0	80.4	4820.0	0.55
W. C. A.						
S. T. C.						
Chisholm						
W. Boyls'n						
Total	138531	8234.0	995.0	89.2	9229.0	0.53
Grand Total	449406	21788.5	11401.0	65.6	33189.5	0.59

Only three of the towns included in the 1926 surveys are included in the tabulation for 1930. The 1930 population of Andalusia is over 1300 greater than the number included in the 1926 survey, and the per capita milk consumption figure for 1930 is 0.28 pint lower than that for 1926. In the 1930 estimate for Auburn the A. P. I. student body and dairy were included and the consumption figure was 0.85 instead of 0.67 pint per capita per day. The Opelika population increased over 400, and the per capita consumption fell from .66 to .49 pint per day.

The 1926 surveys were made during the months of June, July and August, when the seasonal milk flow of cows is above the average for the year. The questionnaire did not call for average annual milk consumption, but requested current consumption data. It follows, therefore, that the figures obtained were somewhat in excess of the average for that twelve-month. In spite of this circumstance, however, the average per capita consumption in five towns of less than 1,000 in 1930 (1.09 pints) compares favorably with that of six towns of less than 1,000 in 1926 (1.08 pints). The other ten towns included in the 1926 survey ranged in population from 1039 to 5725, and the average per capita consumption was 0.92 pint per day. This was considerably in excess of the average per capita consumption in towns of 1001 to 5000 population in 1930 (0.70 pints), but in a majority of these ten towns family cow milk then constituted, and still constitutes, considerably over half of the total milk supply. In six of these communities the proportion of citizens producing their own milk supply is still so considerable that it has been impossible to interest them favorably in organized milk quality control.

It is rather apparent that the 1930 family-cow production figures in some of the cities over 5,000 were roughly estimated. Time for house-to-house surveys and a census of the family cow population was not available. One of the objects of this paper is to point out the desirability of a more accurate knowledge of the number and location of sources of ungraded milk supplies, the safety of which is always subject to question.

No direct relationship between daily per capita consumption and population is apparent. In spite of the differences in population, in Carbon Hill (2519), Hartselle (2204), and Opelika (6156) the average per capita consumption was 0.49 pint per day. In Tuskegee (4736), Troy (7292) and Sheffield-Tusculumbia (10754) the per capita consumption was 0.67 pint per day. In Tuscaloosa and Anniston, cities of approximately 25,000, the per capita consumption exceeded that of many smaller communities, in which family cow milk constituted a far greater proportion of the total supply.

It appears that the average per capita consumption of milk in any particular community is a function of at least three factors: (1) the size of the community, (2) the density of the population, and (3) the nature of the population.

The size of the community determines to a large extent the total volume of milk needed, the area of the milk shed, and the distance from which the milk supply must be collected. These factors, in turn determine the size and stability of the dairy industry, and the level and stability of the retail price of milk. The price affects consumption.

The size of a community to some extent determines the density of its population. It is the latter circumstance, however, which determines the amount of vacant land in the residential sections available for grazing family cows. It is obvious that family cows cannot be kept in an apartment house district, and it is interesting to note how the absence of vacant lots affects the number of family cows in a community.

The nature of the population is a factor of less significance at present than several years ago. In industrial communities, during prosperous eras, the adults of both sexes of a family frequently worked, leaving no time for the grooming and milking



of a cow, whereas in agricultural and commercial communities ample time was available, or this work was done by servants. The present economic situation is, however, resulting in a tendency toward an increase in family cows in industrial communities.

In general, the per capita consumption in textile centers and mining communities was lower than in agricultural centers, although Cordova, Parrish, and Stevenson proved exceptions to this generality. The exceptionally high proportions of family cow milk used in Moulton, Parrish, Boaz, and Union Springs partially account for the high average per capita consumption figures for these cities. It is possible that in communities in which the greater proportion of the total milk supply is produced by family cows, that it should not all be credited to fluid consumption. In families in which milk is plentiful a portion of it sometimes sours and is fed to fowls, pets, pigs, and calves. And after churning, some of the buttermilk is no doubt actually thrown away. In such families ice cream is often made from the surplus. Nevertheless, in the absence of actual data concerning its detailed uses, for the purpose of this survey it has all been credited to fluid consumption, it being assumed that all the buttermilk from that which was churned was consumed.

The 1926 survey indicated that the average per capita consumption of milk by negroes in nine of the communities surveyed was 40% of that of the white population. Approximately 36% of the population of the cities included in the 1930 survey was colored. Assuming that the relative average per capita consumptions of white and colored found in 1926 held for 1930, the average per capita of the 285,000 white persons included in the survey was over .75 pint per day.

The findings of the 1926 surveys, above referred to, and data currently collected in the course of milk quality control activities throughout the State, indicate that the per capita consumption of fluid milk in Alabama cities is not so low as is frequently reported, but that in some instances it approaches the reported consumption figures for the larger cities of the country, at least for the white population.

The figures in the fifth column of the table are most interesting, for they present

a picture of the percentage of the total milk supply in each city the safety of which is being controlled by the health department. Of the approximately 33,000 gallons of milk, cream, and buttermilk sold in these forty-five cities daily, slightly less than two-thirds is being graded. The remainder is produced by family cows, sold at curb markets, or surreptitiously peddled from door to door. Approximately two-thirds of the total volume of milk is produced commercially, and is being graded.

The improvement of the other third of the milk supply in these cities, as well as the extension of milk grading activities to other communities, are twin problems facing the public health and medical forces of this State. But in order that the extent of the former problem may be known, surveys of the number and location of family cows should be conducted at intervals not exceeding one year.

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#### COUNTY FAIRS

Present indications are that fewer county fairs will be held in Alabama this fall than in 1930. Be that as it may, however, arrangements are again being made to have an inspector at every fair, to assist county health departments in enforcing the Exhibition Ground Regulations. Health Officers should notify the central office of the dates of fairs to be held in their counties.

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#### BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

#### CONVINCED

Contributed by  
Annie Jewell Brown  
Associate Director

Dr. Morgan opened his office door to find Miss Smith, the county public health nurse, waiting to see him.

"Good morning, Miss Smith. What can I do for you this time?" he said, as he cleared away some debris that had collected on his desk.

"Last week I gave typhoid inoculations in the Macedonia community," said Miss Smith. "Mrs. John Stevens asked me to go by to see her and I did. She seemed to be very much disturbed about herself. In fact she was almost desperate. She told me

that within a year she has had two abortions and that now she is pregnant again. She says she doesn't believe she can stand to go through another unsuccessful pregnancy. I tried to reassure her and told her that very likely something could be done for her if she would place herself under a doctor's care immediately. She is only three months pregnant now."

"I remember Mrs. Stevens very well. This is her fifth pregnancy but she has never gone to term. She has always waited until she got into trouble before she called me. I have never felt that I really had a chance to do anything for her."

"Mrs. Stevens told me you were her family doctor and asked me to come by to see you. She will come in Saturday to see you herself. I told her to bring a specimen of urine in case you would like to have one for examination. I advised her to rest in bed for a while each day and to stop working in the field. I told her to eat fruit and vegetables and bread and drink plenty of milk until you gave her a list of the foods you would like her to have. She wants me to come to see her again so I came by to get your instructions before I make another visit."

"If you can do anything to help Mrs. Stevens safely through with this pregnancy, then I will say that there is something to this prenatal program you are always talking about," said Dr. Morgan with a hint of challenge in his voice. "If you have a chance to see Mrs. Stevens again before she comes in for her examination go right ahead with the advice you have started giving her. Come back to see me next week about this time and I will try to give you some more definite instructions about what to help me get across to her."

Miss Smith departed in high spirits, albeit just a little afraid that something would happen that things wouldn't turn out all right. She was more than a little anxious that she should succeed in this case, for it was to be the test of her ability to convince the people and the doctors that she could help expectant mothers to lead a safer and more healthy life which would result in more vigorous babies.

The nurse was in the Macedonia community quite frequently that year and each time she dropped by to give a friendly word of advice to Mrs. Stevens. She left some

literature on prenatal care and there were always questions to be answered. She taught the mother what kind of clothes to wear and what kind to make for the new baby. She showed her how to vary her diet and still keep within the limits of her diet list. She showed the husband how to make an inexpensive crib for the baby and she helped them collect and prepare the articles necessary for the delivery. She kept in close touch with Dr. Morgan about Mrs. Stevens' condition. Even Mrs. Stevens' mother eyed Miss Smith with respect after the first few visits.

Miss Smith continued to visit in the home every two weeks and Mrs. Stevens communicated with Dr. Morgan at least that often.

She no longer seemed frightened and desperate but looked forward to her confinement with confidence and joy.

The eventful day finally arrived and a seven pound girl was born to Mr. and Mrs. John Stevens. Many names were suggested but Dr. Morgan over-ruled them all.

"This baby's name is Mary Smith Stevens. She would never have arrived here safely if Miss Mary Smith had not been so interested in her mother." And Dr. Morgan filled out the birth certificate accordingly.

"Dr. Morgan, will you see Miss Smith any time soon?" asked Mrs. Stevens. "My sister thinks she is pregnant and would like for Miss Smith to come to see her."

"Miss Smith will be here as soon as she hears that her namesake has arrived, but I will drop her a note just the same. I wish you would tell all these women to send for her as soon as they find that they are pregnant. I don't know how she does it but she seems to have a way of making you folks believe that an ounce of prevention is worth even more than a pound of cure."

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## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

### SHALLOW WELLS

From time to time thousands of water samples taken from shallow wells have been sent in for examination to the laboratories of the State Board of Health. Many of these samples are accompanied by the request that they be examined for typhoid fever. It does not appear generally known



that such waters cannot be examined successfully for typhoid bacteria. They are, however, examined for *B. coli*, which is used as an index of contamination. The origin of this contamination determines its significance. Of these thousands of samples examined 95% showed *B. coli* contamination. Hence, such examinations are of relatively little value. The quality of water from unprotected shallow wells, judged from a laboratory finding, can be predicted then in nineteen out of twenty cases.

The physical findings in reference to construction and location of the wells are in the majority of instances the real measure of the water quality. Few wells are ever contaminated from the bottom. This is another way of saying that in the great majority of cases the water entering the well from the water bearing seam or stratum is safe.

A study of water-borne typhoid covering the United States and Canada for the period 1920-29 inclusive, was made and the results published in the February 1931 issue of the Journal of the American Public Health Association. In this article underground water supplies are classified as to causes of epidemics. Surface pollution of shallow wells takes first place. The table follows:

#### B. Underground Water Supplies—

1. Surface pollution of shallow wells
2. Faulty well casing or construction
3. Pollution of deep well from adjacent river or lake
4. Pollution of well from adjacent sewer or sewage tank
5. Underground pollution of well or spring in creviced limestone
6. Underground pollution of well or spring, source unknown.
7. Underground pollution of well by surface contamination through abandoned well.
8. Overflow of sewer or flood water into top of well casing.

The general requirements for a safe well are as follows:

1. It should be located preferably 50 to 100 feet from any privy, barn, or sewage disposal works.
2. It should be on higher ground than the privy, barn or disposal works.
3. It should be banked so that no surface water can drain into it.

4. It should have a cover tight against leakage or back drip.

Therefore:

1. Only wells with pumps which do not require priming are safe; the "old oaken bucket" or pitcher pumps are not sanitary.
2. The well must be of water-tight construction above the ground and for 5 to 10 feet below the ground surface.
3. The ground must slope away from the well.
4. The well-covering must be water-tight.

Once the contamination which may reach the well from the surface is excluded and the well has been sterilized through the use of chloride of lime the laboratory examination will then provide a real index of pollution. Such samples should show low total bacteria count and the practical absence of *B. coli*. If these results are not obtained after resterilizing and resampling the well, then there is likelihood that the water entering the well is contaminated and may become infected. A survey of the surroundings may indicate the source or the abandonment of the well may be recommended.

## County Society News

*(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)*

### BULLOCK COUNTY

J. K. Haygood, Secretary

The Bullock County Medical Society at its meeting on August 26 followed the scientific program with a barbecue to which physicians of adjoining counties were invited.

### CLEBURNE COUNTY

F. R. Wood, Secretary

Dr. D. C. Williams of Birmingham is making plans to move to Heflin in the immediate future.

The Integrating Unit of the State Department of Health spent the week of August 3 with the staff of the Cleburne County Health Department.

The town of Heflin has instituted a program of sanitation under the supervision

of Dr. F. R. Wood, County Health Officer, and Arthur N. Beck of the engineering staff of the State Department of Health.

## COLBERT COUNTY

John P. Long, Secretary

Dr. L. W. Chapman has moved from Tusculumbia to Jackson.

Drs. G. F. Littlepage, W. H. Greer, W. H. Blake, Jr., H. A. Griffith, J. P. Long, E. W. Gray, W. T. Burkett and W. A. Finley attended the meeting of the Northwestern Division of the Medical Association of the State of Alabama which was held in Florence on August 13. Dr. G. F. Littlepage, a member of the society, is vice president of the division.

## CONECUH COUNTY

W. F. Betts, Secretary

Dr. E. L. Kelly, County Health Officer, has returned from a vacation at Havana, Florida.

Dr. W. R. Carter, Repton, who has been ill, is reported as improving.

Dr. W. A. Blair, for many years a member of the society, died at his home at Brooklyn on July 29.

A chest clinic, scheduled to begin September 1, is arousing much interest among the physicians of the county.

## CULLMAN COUNTY

R. B. Dodson, Secretary

The Cullman County Medical Society held its regular monthly meeting at the Alabama Hotel August 3 at 7:00 P. M. Dr. W. E. Wilson of the State Department of Health delivered a talk on the treatment of syphilis.

At a special meeting of the County Board of Health August 5, Dr. M. S. Whiteside was elected County Health Officer to succeed Dr. A. C. Bradham, resigned.

Dr. W. L. Tucker and family have returned from a vacation in and near New Orleans.

Dr. J. G. Daves has returned to Cullman from a visit to relatives in Georgia.

The second clinic for crippled children was held in Cullman July 24. About 35 children attended.

During July there were 97 live births and 20 deaths in the county.

The Cullman County Medical Society is planning a barbecue with all the "trim-

mins" for September. Dr. Frank Chenault of Decatur will be the principal speaker.

## ETOWAH COUNTY

Dewitt Faucett, Secretary

Dr. W. T. Morgan of Gadsden died August 5.

At the regular monthly meeting of the Etowah County Medical Society August 5, Dr. J. P. Stewart of Attalla read a paper on Eclampsia.

Dr. Bert McCord, a graduate of Northwestern in 1929, and Dr. Ormand Ralph Grimes, Emory University 1930, have applied for membership in the Society.

## GENEVA COUNTY

M. E. Doughty, Secretary

The Southeastern Division of the Association met in Geneva August 11. Vice President G. W. Williamson of Hartford presided. Papers were read by Brannon Hubbard, Montgomery; Frank C. Wilson, Birmingham; V. J. Gragg, Clanton; and W. S. Hannah, Montgomery. The State Health Officer, Dr. J. N. Baker, also addressed the meeting.

## HENRY COUNTY

T. J. Floyd, Secretary

The regular meeting of the Henry County Medical Society was held July 14 at 7:30 P. M. Supper was served at the Alice Hotel. Dr. L. P. Shell read a paper on pella-gra.

## JEFFERSON COUNTY

W. B. Hardy, Secretary

Doctors Scott, McQuiddy and Collins announce the association with them in the practice of urology of Dr. Jarratt P. Robertson.

## MORGAN COUNTY

H. C. McRee, Secretary

At a recent meeting of the Morgan County Medical Society, the following resolution was adopted:

*Resolved*, That the Morgan County Medical Society regards it as a mistake that the annual volume of Transactions is to be supplanted by the Journal.

Publication of the resolution in the Journal was requested.



## TALLADEGA COUNTY

J. H. Hill, Secretary

The Talladega County Medical Society in cooperation with the County Health Department put on a chest clinic during August 4-7 in which 63 persons were examined. Dr. T. D. Rivers, chest clinician from the State Department of Health, made the examinations. Tuberculin tests were made on young children and roentgenograms were made where indicated. Twenty cases of definite tuberculosis were found.

The physicians of the county showed considerable interest and it is believed that considerable good was accomplished.

## TALLAPOOSA COUNTY

Jno. A. M. Nolen, Secretary

A meeting of the Tallapoosa and Elmore County Medical Societies was held at Camp Dixie on Lake Martin August 18. Papers were read by Drs. Robert Parker of Montgomery, W. D. Wood, Camp Hill; T. D. Rivers, Montgomery; and J. J. Walls, Alexander City.

## DEATHS

Wesley A. Blair, Brooklyn, July 29.  
 Tillie Z. Canterberry, Bessemer, July 22.  
 Erskine G. Donald, Pine Apple, July 1.  
 William W. Haden, Huntsville, August 13.  
 Edward P. Hill, McShan, June 29.  
 T. Warburton Jones, Camden, July 17.  
 William T. Morgan, Gadsden, August 5.  
 William T. Rogers, Luverne, August 4.

ly the more effective than neoarsphenamine. The evidence for the efficiency of neoarsphenamine is conspicuously small. The most carefully investigated and reported clinical material has been treated with arsphenamine rather than with neoarsphenamine. One of the characteristics of neoarsphenamine, which will affect any attempt to estimate its gross clinical value, is the marked variability between different lots of the preparation even from the same manufacturer. (Jour. A. M. A., August 15, 1931, p. 480.)

## CINCHOPHEN AND NEOCINCHOPHEN

In consideration of reports of untoward effects, it would be well to discontinue the use of cinchophen and to substitute neocinchophen for it. Even though neocinchophen owes its activity to cinchophen, it is so slightly soluble as to be almost tasteless, devoid of irritant action on the stomach, and of remarkably low toxicity. If cinchophen is prescribed it should be under its pharmacopeial name and not as "Atophan", which is more expensive and is marketed with unwarranted claims. If Neocinchophen is wanted it should be prescribed under this name and not under the uninforming designation "Tolysin". In view of the serious though rare poisoning from ordinary doses of cinchophen, the use of this drug should be restricted as much as possible to cases in which other non-narcotic analgetics, such as salicylates, acetylsalicylic acid or amidopyrine, have been tried and failed to give adequate relief, and in which the suffering is sufficiently great to justify the risk. (Jour. A. M. A., August 8, 1931, p. 409.)

*Truth About Medicines*

## ARSPHENAMINE AND NEOARSPHENAMINE

Comparisons of the therapeutic value of arsphenamine and neoarsphenamine must take into account the difference of arsenical content, which is one-third higher in the case of arsphenamine than in the case of neoarsphenamine. Even allowing for this difference, it is quite generally conceded that arsphenamine as such is therapeutical-

## PROPAGANDA FOR REFORM

Cultivation of "Common Cold" Virus.—The growing conviction that "common colds" are not due to any micro-organism thus far included in commercial vaccines, but to an unknown filtrable virus or group of viruses, is strengthened by the currently reported successful cultivation of bacteria-free pathogenic nasal filtrates. The work indicates conclusively that the filtrable agent associated with "common colds" mul-

tiplies or is multiplied in the embryonic tissue medium. (Jour. A. M. A., August 15, 1931, p. 466.)

The Kaadt Diabetes Treatment.—Reports are being received that a diabetic treatment is being sent out by the Diabetic Laboratories of Fort Wayne, Indiana, the material as sent to the patient by this concern being signed by C. F. Kaadt, M. D. A quart bottle of the medicine is sold for five dollars and the patient is asked to disregard the testing of urine for sugar. A request sent to Dr. Kaadt by the American Medical Association, Bureau of Investigation, requesting that he declare the composition, did not bring this information. Instead it appeared by the reply that while Dr. Kaadt is willing to let laymen infer that he has a cure for diabetes and sells this remedy on the mail-order plan, telling diabetics that when using it, it is unnecessary for them to use insulin or diet, he is, as yet unwilling to give the medical profession any information on the subject. This, in spite of the fact that he admits that he has used this remedy for nine years and that he has never failed to produce a cure. (Jour. A. M. A., August 15, 1931, p. 479.)

Fayro.—The Federal Trade Commission has issued a Cease and Desist order against the Fayro Laboratories, Inc., which demands that the unwarranted and false claims made in the exploitation of the "obesity cure" Fayro be discontinued. The Commission found that Fayro had essentially the following composition: Epsom salt,  $7\frac{1}{2}$  parts, common salt  $11\frac{1}{2}$  parts, Glauber's salts 1 part, scented with oil of pine needles. The retail price of Fayro was one dollar; the approximate cost of the ingredients was less than three cents. The exploiters of Fayro advertised that when dissolved in a tub containing a quantity of hot water and the body immersed therein, it would dissolve and remove excess fat. Over one and one-half million packages of Fayro have been sold to the gullible and about one-half million dollars spent in advertising this humbug. When the Federal Trade Commission was holding its hearings, the Fayro concern was able to produce two supposedly reputable physicians, Dr. R. C. Falconer and Dr. William C. Olson, to testify in favor of the nostrum. (Jour. A. M. A., July 11, 1931, p. 122.)

Vapex.—Vapex is manufactured by Thomas Kerfoot and Company, Ltd., England and is distributed in the United States by E. Fougere and Co., Inc., New York. The stuff is sold at a price that seems to be enormously in excess of the cost of its ingredients, which may explain the vast sums that have been spent on persuading the public that the product is a marvel of therapeutic efficiency. Some of the advertising slogans have been: "Vapex Amazed Scientists. . . Its vapor kills cold germs". "Instant relief for nasal affections with its delightful vapor". An advertisement in *Good House-keeping* contains the preposterous statement to the effect that "relief from head colds is instantaneous with Vapex". Vapex was examined in the A. M. A. Chemical Laboratory and as a result of this examination the Laboratory concluded that a solution having essentially similar chemical and physical attributes as Vapex may be made as follows: Menthol 15 Gm., Oil of Lavender Flowers 15 cc., Alcohol 94 per cent to make 100 cc. It thus appears that this alleged "important medical discovery" is essentially menthol dissolved in alcohol and perfumed with oil of lavender. And it is sold with the implied claim that it will cure nasal infections, give quick relief from catarrh and hay fever, and prevent influenza! (Jour. A. M. A., July 18, 1931, p. 196.)

Theelin and Theelol.—The announcement three years ago of the separation of a potent ovarian hormone from the follicular fluid by Allen and Doisy marked a distinct step in the direction of progress. The product had an estrus-promoting activity that could readily be assayed. Other investigators also have been engaged in the study of ovarian hormones, and medical journals carry accounts of a considerable number of products, each designated by some distinctive trade name. A new era was ushered in when Doisy announced, at the thirteenth International Physiological Congress in 1929, the isolation of a hormone in crystalline form. The Council on Pharmacy and Chemistry of the American Medical Association adopted the name "theelin", selected by Doisy, as the nonproprietary designation to be used in New and Nonofficial Remedies for the ovarian hormone made by the process of Doisy. Last year Doisy and his co-workers recorded the discovery of a second estrogenic substance in the urine of



pregnant women. It is a triatomic alcohol for which the name theelol has been proposed. Theelin appears to be approximately twice as active as theelol in adult spayed rats, whereas theelol is six or seven times as active as theelin in immature female rats. It is too early to speculate on the possible uses of these two substances. (Jour. A. M. A., July 4, 1931, p. 33.)

**The Insuloid (Insurol) Fraud.**—For the past year or two, there has been exploited from New York City and Bridgeport, Conn., a particularly vicious piece of quackery directed against diabetics. The nostrum involved was known, first, as Insurol and was sold by Official Products, Inc., of 276 West 43rd St., New York City. The advertising stated that Insurol Tablets "combined insulin with the actual substance of the pancreas gland" and they were described as "a triumph of Germany's biochemical laboratories". Later, the name of the concern was changed to the Insurol Company of America, Inc. About the time that this change was made, there was also a change in the name of the product from Insurol to Insuloid and the public was told, in effect, that Insuloid was merely a new name for Insurol. The facts were that the products were entirely different. Insurol Tablets were keratin-coated and contained animal tissue (probably derived from the pancreas). They did not contain boldo, jambul; myrtillin, bean-pod tea, or lithium benzoate. Insuloid, on the other hand, was an uncoated tablet and contained all of the products just named, except pancreatin. It did not contain insulin. Government experts introduced uncontroverted testimony to show that neither Insurol tablets nor Insuloid tablets would cure diabetes and that neither was a substitute for insulin administered hypodermically. The Post Office authorities issued a fraud order against the Insurol Company, Inc., H. C. Young, President, Official Products, Inc., Otto Probst, Manager, at New York City and Bridgeport, Conn. (Jour. A. M. A., July 4, 1931, p. 47.)

**Asthmol and Asthmol-Ephedrine Not Acceptable for N. N. R.**—Asthmol and Tsthmol-Ephedrine are products of Opotheapeutic Laboratory, Sagone & Co., Palermo, Italy, distributed in the United States by the Asthmol Co., New York. Asthmol is

a liquid preparation, marketed in the form of ampoules. The product is stated to be a combination of pituitary and suprarenal extracts but no definite statement of composition or potency is made. As the name suggests, Asthmol is proposed for the treatment of asthma. Asthmol-Ephedrine (also referred to as "Syrup of Asthmol") is stated to be composed of: "Ephedrine 0.20 Sodium Benzoate, Jodide and bromide, ana 0.25,—Grindelia, 1.75—In 100 cc. of gomenolo-Balsamic syrup. Contains alcohol: 2% by volume." The claims advanced for Asthmol-Ephedrine are typical of those made for complex mixtures—the praise of each constituent is sung without any consideration being given to the question as to whether the several constituents, even if they have the virtues ascribed to them, are indicated at one and the same time and in precisely the amount furnished by the formula. The Council on Pharmacy and Chemistry finds Asthmol and Asthmol-Ephedrine (Dr. Sagone's Syrup of Asthmol) unacceptable for New and Nonofficial Remedies because their composition is unscientific and indefinite, because their names are therapeutically suggestive and not descriptive of composition, and because the therapeutic claims made for them are unwarranted. (Jour. A. M. A., July 11, 1931, p. 103.)

**Healthola Diabetic Flour Not Acceptable for N. N. R.**—Healthola Diabetic Flour, according to the label on the package, contains protein, 49.73 per cent; fat, 24.56 per cent; carbohydrates, 15.92 per cent, and contains no sugar or starch. According to the advertising of the distributors, Healthola Diabetic Flour Co., Huntington, W. Va., "Healthola is a flour made from an imported vegetable". No statement of the identity of the product is contained on the package or in the advertising nor is there a statement that in the body the protein contained in the product is largely converted into carbohydrate. The Council on Pharmacy and Chemistry finds Healthola Diabetic Flour unacceptable for New and Nonofficial Remedies because its identity is not declared on the label and in the advertising; because its name is not descriptive of the composition but therapeutically suggestive instead, and because the claims are misleading and unwarranted. (Jour. A. M. A., July 11, 1931, p. 103.)

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## MANAGEMENT OF THE EPILEPSIES\*

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The epilepsies or convulsive states, as they are now preferably called, form a group of conditions which are still poorly understood. As Wilson<sup>1</sup> states, "The condition defeats us on many grounds; its etiology is heterogeneous, its semiology indeterminate, its pathology dubious, its pathogenesis conjectural and its treatment empirical." Added to this complexity is a common belief that these conditions are incurable. The result is often professional indifference. It is my purpose to emphasize that the continuation of attacks and the eventual mental deterioration frequently may be due to neglect or improper treatment. Cure of any case of convulsion depends upon prevention of the attacks over a long period of time. Otherwise, the repetition of attacks produces damage to the brain resulting finally in brain atrophy, and the development of the so-called epileptic habit. Treatment must be instituted early, and adjusted to the individual needs as revealed by continuous observation of the patient.

### *Etiology.*

The convulsive states include a large variety of paroxysmal conditions, the majority of which consist of a loss of consciousness, convulsive movements, or both. No less important are minor paroxysmal phenomena, as sudden pallor, dizziness or dreamy states. It is believed that these states are always symptomatic, although the etiologic basis in many cases is obscure. I shall not attempt to discuss the numerous theories concerning the cause of these conditions, but wish to indicate certain

practical conceptions. There are some who believe that such conditions are always a result of organic disease of the brain and there is no disease of the brain which may not be accompanied by convulsions. Since the same brain lesion in different individuals is not always accompanied by convulsions, it is probable that other factors are of some importance. Lennox and Cobb<sup>2</sup> have proposed three interacting factors: 1. Organic changes in the brain; if not present in the beginning, organic changes in the brain certainly develop with continuation of the seizures. 2. Functional changes in the brain cells, consisting of (a) hereditary susceptibility, (b) physicochemical changes, and (c) psychogenic factors. 3. Changes outside the nervous system, as in the circulation, endocrine glands and gastro-intestinal tract. The importance of these three factors may vary in different cases, and also may vary at different times in the same case. Concerning the physicochemical changes in the brain, they<sup>3</sup> have shown that oxygen deficiency, alkalosis, edema and certain ionic changes (as decreased calcium and increased chloride) tend to induce convulsions. Thus, at the present time, many believe that the fundamental basis for attacks is a disturbance in the metabolism of the nerve cells of the brain. Much of the recent progress in treatment depends upon a knowledge of these factors.

There is evidence that in every epileptic attack there is a severe angiospasm in the brain, so that the brain becomes pale and anemic; this is followed in a few moments by marked venous engorgement, edema of the brain and increased intracranial pressure. Since an angiospasm would initiate the physicochemical changes as mentioned, many believe that the seizures are due entirely to cerebral angiospasm. Whether

\*Read before the Association in annual session, Birmingham, April 22, 1931.



this be true or not, the angiospasm which occurs in each attack is not without effect on the brain, especially when it is repeated. Spielmeyer<sup>1</sup> has found focal areas of necrosis in the brains of epileptics, which is the result of angiospasm. His findings are similar in all types of epilepsy and identical with those in other cases of angiospasm, as in arteriosclerosis. The eventual result is atrophy of the brain, as can be shown grossly by means of encephalography.

In practically all epileptics after seizures have occurred for several years an encephalogram (roentgenogram after replacement of the spinal fluid with air by means of a spinal puncture) shows a certain degree of atrophy of the brain, revealed by dilatation of one or both lateral ventricles, and enlargement of the subarachnoid fluid spaces. In some cases the changes observed in the encephalogram are undoubtedly due to a disease of the brain which is a cause of the attacks, as when there is a shifting of the ventricles to one side. In many cases, however, it seems plausible that the atrophy of the brain is merely a result of the seizures. Thus a similar brain atrophy due to other types of degeneration may be demonstrated in a patient who has never had epileptiform seizures. (Figure 1).



FIG. 1  
Ventriculogram showing extensive brain atrophy in a patient without convulsions.

As a useful hypothesis, one can consider these states as being of complex etiology, but if the attacks are allowed to continue,

the recurring angiospasm results in minute areas of necrosis and eventually leads to atrophy of the brain with mental deterioration. It should be the purpose of treatment to prevent this.

Clinical Types.

In the clinical study of these conditions, the facts revealed by the history and examination will be interpreted according to the viewpoint of the examiner. However, I shall offer certain deductions from a review of 467 cases. In Chart 1 I have listed

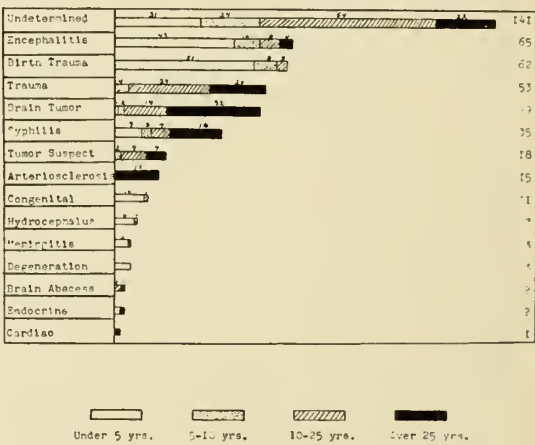


Chart 1  
CONVULSIVE STATES  
Type and age of onset

the cases according to what seemed to be the most important etiologic factor. It can be seen that in about 30% the etiology was undetermined or obscure. In the remaining there was evidence from the history, the neurological examination, or both, of definite etiologic factors. As shown in Chart 2, epilepsy is twice as frequent in

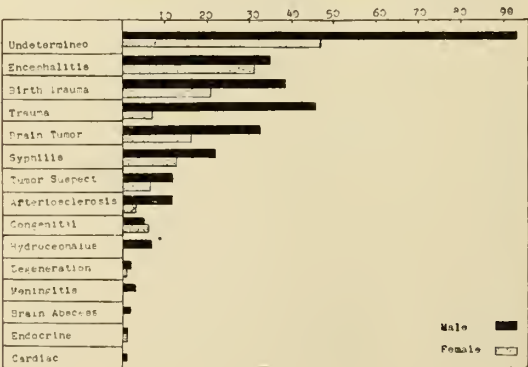


Chart 2  
CONVULSIVE STATES  
Sex incidence in 467 cases

the male (67%) as in the female; the greatest male predominance is found in the traumatic cases. The onset of attacks was before 5 years of age in one-third of the cases, and before the age of twenty-five years in almost 75% (Chart 3). This

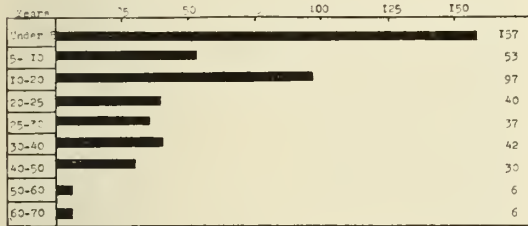


Chart 3  
CONVULSIVE STATES  
Age of onset in 467 cases

shows that epilepsy is largely a problem of childhood and adolescence. After the age of twenty-five years the most common types were those associated with brain tumor, brain injury, syphilis and arteriosclerosis (Chart 1).

Concerning the type of seizure, major convulsions occurred in 287 cases (61%); in 13 of these there was a definitely localized aura, and in 10, attacks were followed by a localized weakness or paralysis. Minor attacks occurred in 48 cases (10%) and combined major and minor attacks in 22 cases. There was one case of purely psychic attacks. In 109 cases (21%) the convulsive movements were localized; these are classified in Chart 4. It is seen that localized seiz-

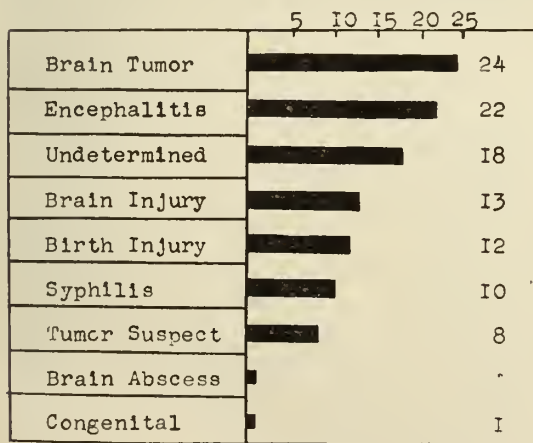


Chart 4  
LOCALIZED CONVULSIONS  
Etiology in 109 cases

ures are most frequently associated with brain tumor, since a neoplasm was verified by operation or necropsy in 22% of these

cases. It is possible that some of the others classified as tumor suspect and as undetermined also were associated with a neoplasm. The next largest group presenting localized seizures was that associated with encephalitis of childhood. The majority of these cases were due to a localized neoplastic, inflammatory or traumatic lesion of the brain.

**Encephalitis:** In this group (13.9%), I have placed those cases in which the history and examination gave evidence of some type of encephalitis. In most of them there was a history of an acute illness in childhood, with fever, convulsions and cerebral paralysis. The initial illness had usually been diagnosed as one of the acute infectious diseases of childhood. The neurological examination showed frequent residual signs, as hemiplegia. I believe that in these cases there is an inflammatory change in the brain and that this is one of the most frequent causes of epilepsy. Other types of encephalitis were also included in this group, as epidemic encephalitis, which has been emphasized by Wimmer<sup>5</sup> as a cause of seizures. I shall briefly cite an example:

A white male, age 21 years, had had an illness about seven years previously with symptoms suggesting epidemic encephalitis. This illness had been followed by attacks of rapid breathing, marked polyuria, restlessness and epileptiform convulsions. The neurological examination showed a rather mask-like facies and other signs of a mild Parkinson syndrome. The daily excretion of urine varied from 10-13,000 cubic centimeters. There were frequent attacks of rapid breathing. The findings were characteristic of chronic epidemic encephalitis, with diabetes insipidus, respiratory tic and convulsions. This case was also of interest from the standpoint of the possible relation of convulsions to water intoxication and hypernea.

**Birth Injury:** Injury at birth is ascribed varying importance in the etiology of epilepsy by various authors. In our series, there were 62 cases (13.2%) giving a definite history of injury at birth, with frequent residual findings as hemiplegia, diplegia, strabismus and mental deficiency. Foerster and Penfield<sup>6</sup> have shown that in such cases there is often a progressive lesion of the brain, with cicatricial



contraction, and that cessation of the attacks may follow excision of the glial scar. I shall briefly cite an example.

A white male, age 7 years, born at full term, the mother being in labor for three days; he was asphyxiated at birth; after being resuscitated he continued to be drowsy, and on the third day developed convulsions, which were more marked on the right side. A craniotomy had been done on the fifth day, and the convulsions then ceased. The child first sat alone at the age of  $2\frac{1}{2}$  years, but had never been able to walk. At the age of 3 years he began to have convulsions regularly, involving first the right arm and leg. The neurological examination showed bilateral spasticity of the arms and legs, with exaggerated tendon reflexes, contractures and pathological toe signs.

*Brain Injury:* Injury to the brain later in life may be a more frequent cause of convulsions than hitherto believed. The recent work of Foerster and Penfield and encephalographic observations lend weight to this belief. There were 53 cases (11.3%) in this series with a history of severe head injury preceding the attacks. In all cases, there was loss of consciousness, and at times other neurological symptoms at the time of injury. In most cases the convulsions began within a year following the injury, and about half of the cases showed abnormal findings on neurological examination. The following is an example:

A white male, age 27 years, had fallen from a horse at the age of 8 years, and had been unconscious for two hours. A year later he began to have attacks, beginning with numbness in the right arm and leg, jerking of the right leg, arm and face, then unconsciousness and a generalized convulsion. The attacks were followed by paralysis of the right arm and leg for about 30 minutes. At the age of 19 years he had had a craniotomy, with removal of a "cyst" of the left parietal lobe. Following this, he had improved for a short time, but the attacks recurred daily. The neurological examination showed a partial right hemiplegia.

*Brain Tumor:* I cannot too strongly emphasize the importance of continued study of all epileptics to exclude a cerebral neoplasm. In our series, a brain tumor was verified in 49 cases (10.5%) and suspec-

ted in 18 additional cases (3.8%). Considering only those cases with generalized attacks, 7% were due to tumor. Since this paper was written, another case considered obscure for a period of three years has had a large glioma of the brain removed. The importance of repeated examination and continuous observation of all epileptics for evidence of cerebral tumor is apparent. In a study of 100 cases of verified intracranial tumor<sup>7</sup> some type of convulsion was present in 39%; in 19% of the cases the convulsions were generalized. This closely approximates the frequency of convulsions in cerebral tumor as reported by Parker<sup>8</sup>, who found the incidence to be 21.6%. Of the cases of brain tumor accompanied by convulsions Parker found that neoplasms of the fronto-parieto-temporal lobes outnumbered those of other locations five to one. Of his 67 cases, convulsions were the first symptom in 38% and had been present as long as 23 years in one case. Of the 49 cases in our series, in 40 (81%) the tumor involved the frontal, parietal or temporal lobe. It is important to note that all ages are represented in these cases (See Chart 1). Attacks had been present in one case for 16 years, another 14 years, one thirteen years, and six others more than 8 years before diagnosis. In 12 cases (24%) there was no evidence of increased intracranial pressure, such as choking of the optic discs. The roentgen-ray examination was of some aid in the diagnosis, showing convolutional atrophy in 8 cases, calcification in the tumor in 4 cases, localized rarefaction of the skull in 2 cases, and enlargement of the sella turcica in 2 cases. I shall briefly cite several examples:

A white male, age 27 years, had had convulsions for 12 years, beginning with numbness, and then clonic spasms of the right arm and leg, rapidly spreading to a generalized convulsion. The frequency of attacks had steadily increased to several per week in spite of the use of large doses of phenobarbital. The neurological examination showed no evidence of any organic disease of the nervous system. A roentgen-ray examination of the head showed a large area of calcification in the left parietal region (Fig. 2). This was the only finding indicating gross intracranial pathology. A large calcified meningioma was removed

from the left parietal region. This patient had never had symptoms of increased intracranial pressure. A roentgen-ray study had never been made, so that the diagnosis had been delayed.



FIG. 2

Roentgenogram showing calcification in a cerebral tumor; the sole evidence of a gross cerebral lesion in an epileptic.

A white female, age 43 years, had had convulsions beginning at the age of 16 years, and continuing until the age of 37 years, a period of 21 years. At the time of examination she complained of headaches, which were thought due to myxedema. A neurological examination showed only a relative upper quadrant hemianopsia for colors in the right side. This was not given sufficient emphasis and a few weeks later she had another sudden convulsion and died. The necropsy showed a gliomatous cyst in the left temporal lobe.

A white male, age 21 years, had had convulsions for several months. The neurological examination showed no evidence of organic disease of the nervous system, and the history did not reveal any significant facts. The patient was not seen for a period of three years. When he returned it was learned that he had had headaches for 3 months, and failing vision for 5 weeks. Examination at this time showed a marked bilateral papilledema and a left hemiplegia. An operation by Dr. C. E. Dowman revealed a large glioma of the precentral region on the right side.

**Syphilis:** The relation of syphilis to epilepsy is often difficult to determine, as the

two conditions may be co-incidental. To have etiologic relationship, it should be known that the syphilis preceded the development of the convulsions. In our series, there were 35 cases (7.5%) in which there was evidence of neurosyphilis. Half of these were cases of congenital syphilis, and practically all showed abnormal neurological signs. Marchand and Bauer<sup>9</sup> stated that epilepsy was due to acquired syphilis in 7% of cases, and that the attacks came usually rather late in life.

**Arteriosclerosis:** There were 15 cases (3%) in this series, in which the attacks were apparently due to cerebral arteriosclerosis. All cases showed retinal arteriosclerosis and physical or mental signs of arteriosclerosis. These patients developed attacks late in life.

**Rarer causes:** Among the rare causes of convulsions are a variety of organic diseases of the nervous system, such as multiple sclerosis, subdural hematoma, brain abscess, congenital defects or various types of progressive cerebral degeneration. In this series there were 11 cases presenting evidence of cerebral mal-development with mental deficiency, and early onset of convulsions; 7 cases associated with congenital hydrocephalus; 3 cases following epidemic meningitis; 2 cases of brain abscess and 3 cases of progressive cerebral degeneration (including Schilder's disease, infantile and late infantile amaurotic idiocy). Another interesting case of cerebral degeneration (not included in the series) was a type described by Geyelin and Penfield<sup>10</sup> as "calcifying brain degeneration", apparently due to an endarteritis calcificans. In this case the roentgen-ray examination showed the entire cranial cavity to be studded with numerous areas of calcification (Fig. 3). There were 2 cases with marked endocrine changes, which were thought to bear a relation to the attacks, and one case of aortic stenosis, with attacks on exertion, in the series.

**Obscure:** About 30% of the cases were obscure in etiology, so that we might generalize that in almost a third of the cases, there is no evidence of organic disease of the brain. These are the cases often referred to as idiopathic or essential epilepsy. It is particularly in this group that hope for cure lies in the early control of the attacks, so that atrophy of the brain may



be prevented. It is most likely that the most important factor in this group is a metabolic disturbance, with physicochemical changes in the nerve cells of the brain.



FIG. 3

Roentgenogram showing numerous intracranial calcification nodules in epilepsy of "calcifying brain degeneration".

It is not my intention to further discuss the numerous theories regarding this group.

#### *Examination.*

In no condition must the entire physical, chemical and psychical organism be more carefully surveyed than in the study of any case of convulsions. The history, with particular reference to birth injury, infectious disease and injury to the head, must be thoroughly investigated. The family history with reference to attacks, nervous diseases and allergic conditions may be of significance. In certain cases glucose tolerance curve, basal metabolism and protein sensitization tests may be of help. In addition to the usual physical and laboratory examinations a complete neurological study should be made, and if the cause be obscure, should be repeated at intervals. This is particularly important for the early diagnosis of cases of brain tumor. A roentgen-ray examination of the head should be made routinely. In 136 cases of this series so examined there were abnormal findings in 27 cases (19%). We are more and more dependent upon the encephalogram as an aid both in diagnosis

and prognosis, in showing the presence of localized lesions of the brain and in estimating the degree of brain atrophy. Thus the absence of air over the cortex with dilated ventricle, particularly if the ventricle be shifted to this side, would make one suspect a localized arachnoiditis with adhesions. A large pocket of air over the cortex with a dilated ventricle would suggest brain atrophy, as the result of some localized disease or as a result of the seizures. On the other hand, a shifting of the brain to the opposite side with dilatation of the opposite ventricle or with marked deformity in a ventricle would indicate a cerebral tumor. Curiously, an encephalogram often results in diminished frequency of attacks.

#### *Treatment.*

*Surgical:* The surgical treatment of epilepsy has received great impetus from the recent work of Foerster and Penfield<sup>11</sup>. They have shown that following a brain injury there may develop a progressive lesion of the brain due to scar formation with traction on the brain. Microscopically such a scar consists of both connective tissue and fibrillary astrocytes with the fibers running in the direction of traction. In such an area they have found phagocytes as long as 12-14 years after an injury, indicating an active lesion. The encephalogram in such cases may show a shifting of the ventricle to the side of the lesion. At operation a slight pulling on the dural adhesions often induces an attack. Removal of the scar by a clean cut incision has resulted in complete cure. In such cases convulsions often did not develop for many years after the injury, the time between the injury and development of convulsions being on the average of five and a half years. As Penfield states, it is not enough to open cysts on the surface or paint the surface with a corrosive, in such cases. The glial scar should be excised. In cases in which a definite cicatrix cannot be demonstrated, cortical excision rests on less certain ground. If a cerebral neoplasm be found, surgery of course offers the only hope. Other surgical procedures have no certain basis. However, cases of Jacksonian epilepsy may be benefited by destruction of the cortical focus. In view of the high frequency of brain tumor as a cause

of localized convulsions, an exploration of cases not otherwise explained is justified. In the case of nocturnal attacks, the drug is to be given in the morning. The additional use of belladonna or bromide is often of benefit. The proper dosage should be continued indefinitely.

*Medical:* The purpose of medical treatment is to prevent the seizures. This should be instituted early, so that the resulting damage to the brain will be minimal. After seizures have been prevented one or two years, it may be possible then to gradually discontinue the treatment without recurrence of attacks. There are four phases of treatment—general hygiene, drugs, diet and dehydration. It is obvious that any physical abnormalities discovered should be corrected as far as possible. One danger to be avoided is abrupt withdrawal of these drugs, as this may result in status epilepticus. After the patients have been free of attacks for 2-3 years, the dose may be gradually reduced and possibly withdrawn. In cases not controlled with large doses, one would be suspicious of a cerebral neoplasm or other active lesion. Other drugs, such as glandular extracts might be indicated in specific cases.

In regard to general hygiene, all writers stress the importance of careful regulation of the habits of the patient. Mental fatigue, emotional stresses and physical over-exertion are to be avoided. Proper habits of eating and elimination must be cultivated. Moderate daily exercises in the open air is highly advisable. Alcohol and stimulants are to be eliminated. Thus a life of moderation is an essential factor. If the patient's occupation is such that an attack would be dangerous to himself or others this should be changed; otherwise the patient should take part in the usual activities of life as far as possible.

For control of the seizures, drugs form the most simple method. In cases of uncooperative individuals or where the intelligence is low, this remains the only method possible. Unfortunately, many physicians hesitate to prescribe drugs in these cases, from a fear of producing drug habit or toxic disorders. Thus the patients often are given drugs in insufficient doses or so irregularly that little benefit is received. Other patients are indifferent and neglect regular medication. Bromides and phenobarbital are the most satisfactory drugs. For cases of petit mal, bromides are more effective, phenobarbital usually having little effect. For other cases, phenobarbital may be considered as less apt to produce toxic changes. While toxic reactions have been reported, they are uncommon, and often the patient can later take the drug without toxic effect. The drug should be used in sufficient amount to control the attacks, up to 4.5 grs. daily. It is not thought best to exceed this dose. The drug should be given according to when the attacks occur; thus with nocturnal attacks, the drug should be given in the evening; with diur-

Concerning diet, the ketogenic diet has been used long enough now to show that it is a valuable addition to the treatment of epilepsy. After 8 years, Helmholtz<sup>12</sup> reported among 141 cases, 43 cured, and 32 improved; among adults, Barborka<sup>13</sup> reported 12% cured, and 44% benefited. I shall not burden you with the details of this diet which is fully explained in the literature. Its mode of action has been variously explained, as by the sedative action of the ketone bodies, acidosis and dehydration. The physicochemical factors of oxygen tension, hydrogen-ion concentration and capillary permeability however are all interrelated. This diet is most effective in early cases without evidence of a gross lesion of the brain. It is difficult to manage unless the patient is intelligent and cooperative. In young children with behavior disorders, such as refusal to eat, it is difficult to regulate without removing the child from the home environment, such as into the hospital. If effective, the diet should be continued for six months, and then it may be possible to gradually return to the customary diet.

McQuarrie<sup>14</sup> showed that convulsions tend to occur when there is a positive water balance, and that the effect of the ketogenic diet was due to dehydration of the tissues, thus procedures which produce a tendency to acidosis lead to dehydration. With limited fluid intake milder ketosis may be effective. The importance of dehydration has also been shown by the work of Fay<sup>15</sup>. He reported 5 cases free of attacks after limiting the fluid intake to 8-20 ounces daily. Dehydration may be hastened by a salt free dry type of diet. It is of greatest value with severe seizures, and of little value in petit mal.



## CONCLUSIONS

Epilepsy is a symptom. In about 30% of the cases the cause is obscure and probably related to physicochemical changes in the nerve cells in the brain; in the remaining cases, definite brain lesions may be found. The most common of these in order of frequency are encephalitis, brain trauma (at birth or later), brain tumor, syphilis and arteriosclerosis. These are briefly discussed. The onset in one third of cases is before 5 years of age and in 75% before 25 years of age. Males are affected twice as commonly as females. With each attack occurs a severe angiospasm of the brain which may cause focal necrosis and eventually atrophy of the brain. This may be shown by an encephalogram. Treatment should prevent this. The treatment in certain cases is surgical. This is particularly true in cases of brain injury where there is evidence of a cortical scar, and in cases of brain tumor. The high incidence of brain tumor in cases of Jacksonian convulsions (22%) makes a surgical exploration justified. Medical treatment consists in general hygienic measures, the ketogenic diet, dehydration and drugs. Effective treatment should be continued until the patient is free of attacks for at least two years. The patient should be kept under close observation, particularly if the etiology be obscure, so that treatment may be varied as the need arises. This is most important in patients developing signs of brain tumor.

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## DISCUSSION

*Dr. J. S. McLester, Birmingham:* I would like to express my appreciation of Dr. Smith's paper and to discuss briefly one phase of it. I am glad he has emphasized the fact that epilepsy is not a disease, but a symptom. To me the most satisfactory explanation of the epileptic seizure is that offered by the "explosive theory"; this assumes that in the brain of the epileptic there is some abnormality of structure which "primes" the patient for the attack, and that at intervals there occurs some physico-chemical change which, exerting a "trigger" action, precipitates the attack.

I have been particularly interested in the ketogenic diet to which Dr. Smith refers. It should be emphasized that this treatment is not effective in elderly epileptics who have already acquired atrophy and other brain changes, but that its real usefulness is in youthful patients. Reports would indicate that the treatment is effective in about 30 per cent of patients. The ketogenic diet demands an excessive amount of fat and permits only a small amount of protein with a minimum of carbohydrate. This means no bread, no sweets, no fruits, and only the leafy vegetables. The diet is difficult to arrange and extremely monotonous. Still, it is worthwhile.

It is now recognized that the benefit which comes from this diet is not due merely to the acidosis which it produces, but rather to certain accompanying physico-chemical changes within the brain, among which are dehydration and improved oxygenation.

*Dr. H. S. Ward, Birmingham:* Dr. Smith has brought us a well-balanced paper, showing an enor-

mous amount of work. This number of patients, so beautifully classified and well-studied, constitutes a real contribution to epileptic study.

I have always felt that epilepsy was something of a personal matter; certain people under certain conditions will have an explosion or a convulsion while other people under the same stress and conditions will not. There is an analogy in men who will get extremely angry if you do certain things to them while others will only smile at you. I think the background of epilepsy is largely a constitutional matter. For instance, you have seen children with phimosis; after breaking up the phimosis the convulsions are relieved for a time. It is very difficult to believe that that would occur at all times, because it doesn't. I have always looked upon epilepsy somewhat in the same light. A certain patient with brain trauma will get well and have no convulsions; another patient will have general or localized convulsions.

The use of the ketogenic diet and luminal represents an advance in the treatment of the epilepsies. Luminal, apparently, is more satisfactory than bromide to give continuously. It doesn't upset the patient so much.

In the ordinary run of patients, I believe the most important thing to do is to remove any and all types of irritation. If an injury to the brain is responsible, it should be attended to; if another type of irritation exists, it should be removed. This accomplished, further procedures are rendered less difficult.

*Dr. W. A. Smith (closing):* I wish to thank those who discussed the paper. I agree with Dr. McLester in his explosive theory; I also agree with Dr. Ward that there is a constitutional basis but I do not believe that that is all.

I feel personally that the problem of epilepsy is a tremendous one. The number of afflicted individuals is startling. It has been estimated that there are a half-million epileptics in this country, and the number must be growing all the time. I feel the subject deserves a great deal of consideration. When we can get away from the idea that epilepsy is simply a hereditary type of degeneration and study these patients and treat them, I think definite results will follow.

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## ENCEPHALITIS\*

WILMOT S. LITTLEJOHN, M. D.,  
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This will be a general discussion of the subject of encephalitis. It is made up chiefly of personal observations and experience derived from seeing hundreds of acute and chronic encephalitis patients at Bellevue Hospital, the New York Neurological Institute, and in private practice. Most of the chronic patients seen at Bellevue were not admitted to the hospital because if all

were accepted they would soon fill the entire institution.

Encephalitis has been incorrectly diagnosed most frequently in the last few years probably due to the large amount of literature on the subject and the attention that has been called to the disease. Very often encephalitis is not recognized or very often some other condition is incorrectly diagnosed as encephalitis. This disease has been incorrectly called "sleeping sickness" but you will note that in this discussion we will refrain from using the word *lethargica*. This is for the very good reason that it is often misleading; insomnia, excitation and delirium are almost as common as somnolence. Also, the term chronic or subacute encephalitis will be used rather than "post-encephalitis". Encephalitis is still present and often progressive in this stage and therefore "post-encephalitis" is misleading.

*Etiology:* The etiology of encephalitis has been attributed to practically every type of virus, toxemia and coccus. Rosenow claims to have been able to isolate streptococci in the brain of encephalitic animals. We do know that the herpes virus will cause almost typical symptoms and encephalitic lesions in the brain of rabbits. It certainly seems to follow and to complicate many of the common acute infectious diseases such as influenza, scarlet fever, measles, and mumps and often follows vaccination. Wiesen reports encephalitis following Pasteur treatment. The disease is most likely due to a filtrable virus, even the true epidemic encephalitis. Kling, Loenberg, and Wassen reported one case of post-vaccinal encephalitis for each 15,000 vaccinations in the spring vaccination period of 1929, in Sweden. This was after a careful check of each vaccination done. The chronic encephalitis syndrome sometimes follows cranial trauma with no history of other acute illness.

Encephalitis is endemic and also occurs in epidemics. Some authorities believe the virus is previously present and is activated by acute illness, exposure, or trauma.

*Stages:* The disease may be divided into the incubation or prodromal stage, the acute stage, and the subacute or chronic stage. In the incubation or prodromal stage following vaccination, measles and other acute infections, the period of fever

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\*Read before the Association in annual session, Birmingham, April 21, 1931.



or acute illness would correspond to this. The epidemic type is often characterized by malaise and headache in the prodromal stage. The onset is usually gradual but may be abrupt and often spectacular.

*Symptoms:* In the acute stage the symptoms are chiefly those which can be referred to the central nervous system. It is often, but not always, attended by a low inconstant fever and sometimes vomiting. There is a general feeling of malaise. Sometimes there is absolutely no history of the acute illness and the disease as first seen shows chronic manifestations.

The central nervous system symptoms are legion and may vary in the same patient from one examination to the next. The acute symptoms are often mild enough to escape attention and the disease is only recognized after the patient has gone into the chronic stage. Often the doctor refuses to make a diagnosis of encephalitis because of the absence of ocular abnormalities and somnolence, one or both. It is not uncommon for one or the other to be absent, both to be present, or one or the other to appear and disappear at intervals. When, however, ocular disturbances and lethargy are present they are very characteristic. The lethargy may be constant and profound throughout the acute illness, and usually suggests a poor prognosis.

The most frequent ocular disturbance is internal or external strabismus, giving the classic diplopia. There may be inequality of the pupils, dilated pupils, or Argyll-Robertson pupils. Loss of the accommodation reflex and poor convergence are not infrequent and when present are almost pathognomonic. Oculogyric crises, spoken of as "ceiling-spasm", are an infrequent complication. Most often this occurs in the chronic stage. In this syndrome the eyeballs turn up until the cornea is almost hidden. This occurs at infrequent intervals and is very distressing during the spasm. It may last a few minutes or several hours.

Papilledema or choked disc is not infrequent especially in meningo-encephalitis hemorrhagica. This sometimes leads to a mistaken diagnosis of brain tumor with subsequent operation. This is usually associated with visual disturbances, often blurring of vision but sometimes temporary blindness. One patient had a complete homonymous hemianopsia.

Lethargy, when present, is very suggestive. Often, however, the patient is excited or alternately excited and lethargic. Some of the patients have a distressing insomnia and in the chronic stage this insomnia may extend over a period of weeks or even months without any sleep. Very characteristic when present is reversal of the sleep rhythm. These patients sleep during the day and remain awake at night. When this extends into convalescence the patients often become economically adjusted by obtaining night work. The history of upset in the sleep rhythm and insomnia is very important in making the diagnosis in suspected chronic encephalitis.

Sometimes a facial paresis will appear during the illness. This often clears up but may be permanent. Spasmodic torticollis, which sometimes complicates the chronic disease, has not been fully explained. It is, however, probably due to a release phenomenon which the patient learns to overcome by simply putting the hand to the cheek, usually to the side opposite from that toward which the face turns. A chronic, persistent torticollis may be due to paralysis of the sternocleidomastoid muscle on the side toward which the face is pulled.

In my experience about 55% of the epidemic encephalitis patients eventually developed the Parkinsonian syndrome. This sometimes begins in the acute illness but usually appears in the subacute or chronic stage. A very characteristic symptom is the mask-like facies with unwinking, reptilian stare. Drooling saliva accompanies this symptom, the patient often holding the saliva in the mouth until it becomes very offensive. This is probably due to a loss of the autonomic swallowing reflex and should probably be listed as a motor phenomenon. The Parkinsonian syndrome of the encephalitides is not typical of Parkinsonian disease due to presenile cerebral arteriosclerosis. In the syndrome the tremor is coarser and not an outstanding part of the picture. True Parkinson's disease appears in later life, while the Parkinsonian syndrome of encephalitis may appear any time from infancy to senility.

General or Jacksonian convulsions early in the disease are not infrequent. They are particularly prone to appear in children with this disease. Sometimes a localized convulsion will precede a paralysis. This

paralysis may be fleeting or permanent and is usually of the spastic type as against flaccid types which accompany poliomyelitis.

Choreiform movements, which may complicate the encephalitis picture, make it very important that any suspected chorea patient have a careful study to eliminate the possibility of encephalitis. The prognosis and treatment demand this differentiation. These choreic movements may appear in the chronic stage of encephalitis and persist throughout life.

Dystonias, which are frequently diagnosed occupational neuroses, may involve one group of muscles—the muscles of one extremity, the muscles on one entire side, or may be generalized. They are usually, however, limited to one side. The spasmodic torticollis which has been mentioned probably belongs to this group and is too frequently explained on the basis of a functional nervous disorder. There is nothing typical in the deep or superficial reflexes. The deep reflexes may be normal, over-active, absent, or unequal on the two sides. There may be positive Babinski reflexes or the plantar reflexes may be normal.

One patient with a marked perservation of speech was taught to overcome this to a large degree by alternately extending and flexing the arm to touch the nose in time with her speech. This was best accomplished when she used the arm which had a definite tremor. The perservation was so marked that often ten minutes after the examiner had asked a question he would leave and return to find her still answering it. It was inferred that by concentrating the attention and by the effort involved in the above movements the impulses were forced through the diseased basal ganglion.

Behavior disorders are frequent accompaniments of the other chronic symptoms. One of the patients seen at Bellevue exhibited a peculiar tic in addition to a Parkinsonian and Froelich's syndrome. His average gait was two skips forward and a complete left turn, repeated again and again. This patient was finally committed to Manhattan State Hospital because of his conduct disorders. Dr. Walter Bromberg later reported the case.

Persistent hiccough should always make one suspect an acute encephalitis. During

the period of the influenza-encephalitis epidemic, hiccough was quite common. One should look for other manifestations of encephalitis.

Oily skin, oily hair and profuse sweating sometimes appear in the acute stage and are quite common in the chronic stage of the disease. At times there may be a severe conjunctivitis with corneal ulcer, probably due to the infrequent winking and consequent improper lubrication of the cornea. One must be careful in advising sunbaths because in the chronic stage these patients sunburn much more easily than normal individuals. This is probably due to vasomotor disturbances.

*Laboratory:* The blood count may vary from the normal to a leukocytosis with predominant polymorphonuclear cells. Blood cultures are negative. Urinalysis may be negative or it may show albumin and casts. Some patients have hematuria.

Spinal puncture and study of the spinal fluid is imperative. Some patients will have an absolutely normal spinal fluid; but usually the fluid will show characteristic abnormalities. There is then an excess of fluid with increased pressure. The fluid may be clear, cloudy, xanthochromic, or show frank blood. The average cell count will be found to vary between ten and one hundred cells. These are chiefly mononuclear lymphocytes. It should be remembered that it is not uncommon for a patient with encephalitis to have a normal spinal fluid without any increase in the cells. The sugar content of the spinal fluid may be normal or slightly increased. Globulin is usually above the normal. One should not allow a positive Wassermann to mislead one since the patient may have syphilis and encephalitis or a false positive Wassermann may be due to the disease process.

The histopathology is fairly constant and typical. The chief insult to the nervous system is to the blood vessels or perivascular regions, especially in the basal nuclei of the brain; however, the pons, pia-arachnoid and sometimes the ependymal cells of the ventricles are involved. The involvement is chiefly perivascular round cell infiltration. At times, especially in meningo-encephalitis hemorrhagica there may be scattered perivascular hemorrhages with a large blood clot forming. There is usually



no break in the continuity of the blood vessels.

*Differential Diagnosis:* In the differential diagnosis, whether in the acute or chronic stage, it must be remembered that encephalitis may be easily confused with almost any disease of the central nervous system and with numerous systemic diseases. Poliomyelitis can be differentiated usually by the flaccid type of paralysis; the paralysis does not migrate and does not progress after the acute stage. In encephalitis the paralyzes are often transient and migratory. In poliomyelitis, if increase of cells in the spinal fluid is found, they will be of the polymorphonuclear type. Brain tumor can usually be diagnosed by the persistence of the localizing symptoms, the progression of the choked disc and the tremendous increase of the spinal fluid pressure. Cerebrospinal meningitis will be differentiated by a demonstration of the organism in the spinal fluid. Tuberculous meningitis can usually be diagnosed by a history of tuberculosis and a low or absent sugar content of the spinal fluid at some time during the disease. Coma from injury or systemic disease can usually be eliminated by the history and a careful physical examination. Mental disorders of purely functional type can usually be differentiated by the absence of organic neurological findings. Chorea can usually be diagnosed by the history of rheumatism and the heart involvement. In chorea the facial grimacing and choreic movements of the arms are more pronounced.

*Chronic Manifestations:* The acute stage may progress directly into the subacute or chronic stage without intermission, or the chronic stage may not appear for a period varying from a few weeks to six or eight years. The Parkinsonian syndrome is probably one of the most frequent manifestations of the chronic stage of the disease. The symptoms that are characteristic of the acute disease may appear in the chronic. As stated in the general symptomatology, many of these manifestations are as characteristic of the chronic stage as of the acute. Frequently the patient is not seen by a physician or else the correct diagnosis is not made until the chronic stage has appeared years afterward. Then a careful and detailed history is most important for a correct diagnosis. A cor-

rect diagnosis is most important economically to the patient because the physician can assure these harassed individuals that nothing is to be gained by changing from one physician to another. Symptomatic treatment is the remedy that offers them most relief. It is appalling the number of typical chronic encephalitis patients who have been through the diagnostic mill numerous times before eventually reaching someone who will make a correct diagnosis.

The chronic disease is almost always a sequela of acute epidemic encephalitis and possibly influenza. It is not recalled that any patients presented themselves with chronic manifestations who gave a history where the beginning of the disease could be attributed to any of the acute infections or vaccination. It is not improbable that the so-called influenza was really acute encephalitis or a concurrent disease. Some of the patients presented themselves eight years after the acute disease and often the acute illness was only illicit after a painstaking history. Many authorities are beginning to question if any patient who has acute epidemic encephalitis ever recovers so completely that they will not show some residual if seen eight to ten years later.

*Treatment:* At the time this series of patients was being observed at Bellevue the practice was to give large doses of sodium salicylate intravenously during the acute stage. It was thought that patients so treated recovered more rapidly and more fully than those treated otherwise. Frequent spinal fluid drainage is indicated if the cell count is high or the fluid is under increased pressure. Intravenous hypertonic glucose solution has been frequently used with varying results. These treatments have also been used in the chronic patients often with apparently excellent results. The earlier the treatment was instituted in the chronic stage, the more favorable were the results.

Hyoscine, stramonium, and belladonna have given the best results in the long standing chronic cases where muscle rigidity, mental depression and tremor, with excessive salivation, were prominent. In the Parkinsonian types it was found the tremor and muscular rigidity improved or disappeared during sleep. Later it was demonstrated that intracranial pressure is increased during sleep; also, that sodium

nitrite increased intracranial pressure. On this basis sodium nitrite was given to some early Parkinsonians with very favorable results as long as medication was continued. One patient showed almost complete recovery some months after this treatment.

With a localized blood clot complicating meningo-encephalitis hemorrhagica it is sometimes advisable to do a craniotomy after the acute stage subsides. The clot which acts as a tumor is then removed. One such case was not operated on until about eighteen months after the acute attack. There had been absorption of the clot but permanent cortical damage was present. Aphasia and right-sided hemiparesis, which had persisted since the acute illness, were permanent.

Occupational therapy, physiotherapy, and mental and physical hygiene are imperative to the chronic patients. Various vaccines have been, and are being, used but the statistics are not sufficiently large to determine their value. Our hope of treatment seems to lie chiefly in the early recognition of the disease and immediate intensive treatment.

Only when one has seen hundreds of these unfortunates seeking admission to the various charity hospitals and clinics can he appreciate the calamity of acute encephalitis. These patients are mentally alert enough to realize that they are burdens and too often repulsive to their families and themselves. The saying, "any patient quite ill, never fully recovers," probably applies more to encephalitis than to any other disease. Often those who succumb in the acute illness are the most fortunate.

#### DISCUSSION

*Dr. H. S. Ward, Birmingham:* Dr. Littlejohn has so completely covered the field I do not think I can elaborate on his remarks.

Fortunately, I think, in this part of the world encephalitis is not so common as it is in some of the other great centers. Of course, we see encephalitis from time to time; and the most unfortunate thing is, the patient never gets well. Occasionally they die but they never get well. It seems to be a continuous, progressive disease. There may be remissions; some get better for a time, but I do not know of a case of encephalitis that has made a complete recovery. I know of several men who are able to work, but they still have the crippling effects of their old encephalitis.

It has been said that when you see a patient with baffling symptoms and you don't know what else to call it, call it encephalitis. I do not believe

it is so varied in its manifestations as to justify fully such a statement. Yet it presents many different symptoms. Someone issued a book a few years ago that listed some twenty types of encephalitis. I have seen cases in which it was difficult to differentiate dementia precox from encephalitis. I remember in particular one man who was afflicted with what I thought was dementia precox rather than encephalitis. It proved to be encephalitis. I have seen today a patient in whom the same question of diagnosis arises. I am inclined to think it is a case of precox.

The lethargic type of encephalitis is the less difficult to handle since patients so afflicted are not worried about any special treatment. The wakeful type, on the other hand, cause much concern.

In my opinion, the patients should be isolated and lumbar punctures done daily or at frequent intervals if the fluid seems to be under much pressure. Perhaps the salicylates offer as much hope for real treatment as anything that can be used. Frequently it seems to give more comfort than other drugs. Large quantities may be given by mouth if combined with sodium bicarbonate. Perhaps, in a certain number of cases, salicylates intravenously may have some value.

I think the Parkinson syndrome cases are the most pitiable of any that come under our observation. After the diagnosis is made, the patient asks, "Doctor, what are you going to give me and how long will it take to get me well?" Thus they take all the pleasure out of a brilliant diagnosis when they ask you what you are going to do about it.

I feel the encephalitis problem is a big one. One problem of the future will be the care of these cases of encephalitis.

*Dr. Clyde Brooks, Tuscaloosa:* At the 1930 meeting of this body, we had a very interesting paper by Dr. Harold Watkins, in which he said a low sugar content in the spinal fluid was an ill omen; if the sugar content was above a certain amount the prognosis was good.

I would like to ask Dr. Littlejohn to discuss that point.

*Dr. Littlejohn (closing):*—I want to thank the gentlemen for their kind discussion of my paper.

We wonder if encephalitis is actually showing an increase or whether we are just now fully recognizing the disease. In any event, as Dr. Ward has said, we may have many of these patients to care for during future years. We are seeing more and more of them every day.

As to treatment I think we should do something as long as we are not doing harm. If certain a remedy seems to be good for one patient, it should be tried on others. Encephalitis patients will lend you every aid. They will come to you time and time again, no matter how painful the treatment may be.

I am sorry I cannot answer Dr. Brooks' question regarding the sugar content of the spinal fluid. All I can say is that practically every case seen in the acute stage either showed a normal sugar content or a slightly increased one. I do not know what would happen in a patient with a low sugar content.



## THE ETIOLOGICAL DIAGNOSIS AND TREATMENT OF FOUR CASES OF HEART DISEASE\*

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To bring this phase of cardiac diagnosis to your attention, I shall present, by way of illustration, four cases of heart disease from four different causes.

**Case 1.** The first case is that of an elderly man, age 70 years, who complained of nocturnal attacks of shortness of breath and precordial pain.

*Past History:* He denies venereal infection. No history of rheumatism or tonsillitis. He has had high blood pressure for several years.

*Physical Examination:* The patient had a generalized arteriosclerosis. The radial, brachial and temporal arteries were tortuous, thickened and showed marked evidence of arteriosclerotic changes. The temperature was 98.6. The pulse was regular and the rate 120 beats per minute. Blood pressure readings were systolic 190, diastolic 60. The heart was enlarged. Cardiac dullness extended 13½ cm. to the left of the midsternal line. On auscultation, a loud blowing systolic murmur was heard at the apex. The aortic second sound was accentuated. A systolic and diastolic murmur were heard over the aortic area. Rales were heard at the bases of the lungs posteriorly. The liver edge extended two fingers-breadth below the right costal margin. There was slight pitting oedema of the ankles. The blood Wassermann was negative. X-ray examination revealed an enlarged heart and a symmetrical dilatation of the aorta.

*Discussion:* There was nothing in the patient's past history to suggest that he had had rheumatic fever or syphilis.

The root of the aorta was involved in an arteriosclerotic process, and it seems most likely that the patient had an aortic insufficiency, because the atheromatous changes had involved the cusps of the aortic valve. The mitral murmur was probably due to a relative incompetence of the mitral valves as a result of an enlargement of the mitral ring.

The patient was put to bed, given morphine, grains ¼, with atropin, grains 1/150,

at bed time, for several nights to insure proper rest. I believe the administration of morphine, for a few nights, to a patient with beginning myocardial failure is an indispensable procedure. When the patient became more comfortable, milder sedatives such as allonal and luminal were used. As the myocardial failure was incipient, and there was no marked oedema or suppressed kidney action, no drastic saline cathartics were used. Cascara seemed sufficient. Unless there is marked oedema or suppressed kidney function, drastic cathartics should not be used, as they weaken the patient and disturb rest.

As to diet, he was given a liquid and soft diet for the first few days. After he was digitalized he was given a well-balanced and more liberal diet of vegetables, fruits and cereals. Instead of three relatively large meals a day, he was given small amounts at frequent intervals, every three hours, making sure to give him an adequate intake of food in the 24 hours and, at the same time, sparing the work on his heart by small meals.

Proteins were somewhat restricted in this case, as the patient had a moderate amount of albumin in his urine, and we wanted to avoid the danger of nitrogen retention. Then too, an excess of proteins increases metabolism, and hence increases the work on the heart. Carbohydrate foods were encouraged, as the failing heart is benefited by a relatively high carbohydrate diet.

He was digitalized by the small divided dose method. He was given 1½ grains of digitalis, powdered leaves, every four hours. The criterion for the administration of digitalis was that used by William Withering, 150 years ago, who said, "Let the medicine be given until it acts either on the kidneys, stomach, pulse or bowels". The digitalis was stopped when the patient became slightly nauseated and the pulse dropped to 70 beats per minute. A dose of 1½ grains of digitalis maintained digitalization. The patient left the hospital greatly improved six weeks after admission.

**Case 2.** Miss A. B., age 26 years, complained of palpitation, shortness of breath, and slight swelling of the ankles.

*Past History:* The patient was subject to attacks of tonsillitis before her tonsils were removed three years ago. Three years

\*Read before the Association in annual session, Birmingham, April 23, 1931.

ago she had an attack of rheumatic fever with involvement of several joints and cardiac symptoms, namely, shortness of breath and palpitation.

*Physical Examination:* The temperature was 100.4. The pulse, 130 beats to the minute. Lips cyanotic. The heart was enlarged. Cardiac dullness extended 12 cm. to the left of the midsternal line. On auscultation, a harsh systolic murmur was heard at the apex, and a diastolic murmur was heard over the aortic area. The liver edge was palpable. There was slight pitting oedema of the ankles. The blood Wassermann was negative.

*Discussion:* We felt sure that here we were dealing with an acute exacerbation of a rheumatic cardiac infection involving not only the mitral and aortic valves but the myocardium.

The patient was admitted to the hospital and given a soft and liquid diet during the acute stage of her illness. She was given small feedings at frequent intervals but adequate in nutritional value for the 24 hours. She was given 25 grains of sodium salicylate with an equal amount of sodium bicarbonate, four times a day, until her temperature and leucocyte count returned to normal. As there were slight but definite signs of beginning myocardial failure she was given digitalis (powdered leaves), grains  $1\frac{1}{2}$ , every four hours, until therapeutic results were obtained. It required  $1\frac{1}{2}$  grain of digitalis a day to maintain digitalization of this patient. She survived her illness and made an uneventful recovery in 7 weeks.

As recurrent attacks of rheumatic carditis are not uncommon, she was advised to avoid future exposure to wet weather and adjust her occupation to her cardiac condition.

Case 3. Mr. S., age 55 years, complained of shortness of breath, swelling of the ankles, and cough.

*Past History:* There was a definite history of syphilis. No history of rheumatic fever.

*Physical Examination:* The heart was markedly enlarged. Cardiac dullness extended 14 cm. to the left of the midsternal line in the 6th interspace. A loud blowing diastolic murmur was heard over the aortic area and down the left sternal border. Rales were heard at the bases of both

lungs posteriorly. The liver was markedly enlarged, extending a hand's-breadth below the right costal margin. The abdomen was distended and there was dullness in both flanks. There was marked oedema of both extremities.

*Discussion:* The mitral murmur in this case was undoubtedly due to a relative incompetence of the mitral valve as it is rare for syphilis to attack this valve. The etiology in this patient's disease gives us an important indication for treatment. The patient had a syphilitic carditis, with involvement of the aortic valves and myocardium and an extreme degree of myocardial insufficiency.

He was put to bed and given morphine, grains  $\frac{1}{4}$ , with atropin, grains  $\frac{1}{150}$ , for the first week. For several days he was given Epsom salt every morning, as the oedema was rather marked; and there was urinary suppression, due to congestion of the kidneys.

For a few days he was put on a Karrel diet. This diet in its strict sense consists of only 800 cc. of milk in the 24 hours, with little additional fluids. After the oedema disappeared, which took about 4 or 5 days, the diet was gradually increased. Soft boiled eggs, cereals, fruits and milk toast were added; and his milk was increased to 1000 cc. The Karrel diet should be used only a few days, as it is a starvation diet and even the failing heart must have adequate nutrition.

A fresh standardized tincture of known potency was used in digitalizing this patient. Instead of using the small divided dose method of digitalization, I felt with this patient there was an indication for more rapid digitalization. He was given a dram (60 minims) of the tincture on admission and this was repeated in 4 hours. Then, he was given  $\frac{1}{2}$  dram (30 minims) of the tincture every 4 hours until therapeutic results were obtained. Digitalis effects were noted in 24 hours and the patient was greatly improved.

For the luetic condition, the patient was given mercury and iodides (potassium iodide, grains 15, three times a day). I believe that it is a safer procedure, when starting your treatment, to put these patients on iodides and mercury or iodides and bismuth for at least 10 or 12 injections before using arsenical drugs. In



this way reactions are less apt to occur. Medical opinion differs on this treatment. Some physicians start their patients immediately on small doses of arsphenamine (.15 to .2 grams).

This patient responded well to his treatment for several weeks, but began to go progressively down hill and died the 6th week of his illness. If these patients are seen late in the disease, with the luetic process extensively involving the myocardium, the outlook is bad; if seen early, I think we can do a great deal to stop the progress of the disease.

Case 4. Mr. C., age 58 years, complained of weakness, fever and slight shortness of breath on exertion.

*Past History:* Denies venereal infection. No history of rheumatic fever.

*Physical Examination:* Temperature 99.4. Pulse 84. Respiration normal. Left cardiac dullness extended 11 cm. from the midsternal line. There were no signs of decomposition. A systolic murmur was heard over the aortic area. The blood Wassermann was negative. The blood culture was positive for *Streptococcus viridans*.

*Discussion:* The patient had a subacute bacterial endocarditis, with involvement of the mitral and aortic valves. He died 6½ months after the onset of his illness.

#### CONCLUSION

I do not know of any current treatment that is of specific benefit to these patients. General upbuilding, with large doses of sodium cacodylate intravenously and blood transfusions, if necessary, is probably our best method of treatment.

It is interesting to note how similar the symptoms and physical findings were in these cases, with a different etiologic factor.

In considering the treatment of our cardiac patients we are losing a great opportunity for therapeutic achievement if we are content to treat only the symptoms and not the cause.

By regarding the etiological diagnosis we will become better practitioners and the patient will gain thereby.

#### DISCUSSION

*Dr. H. M. Simpson, Florence:* I am sure we enjoyed the very practical and timely paper of Dr. Hannah, timely because statistics show that diseases of the cardio-vascular apparatus are exact-

ing a great toll of life in this country. Cardiovascular disease is on the increase.

Happily, a good deal of progress has been made in the last ten years in the diagnosis and treatment of cardiovascular diseases. Work of men like Cabot, in doing a large number of autopsies on cardiovascular patients who have been under observation for a comparatively long period of time, has been of great value. The pathology responsible for the symptomatology has been demonstrated. Then, McKenzie and Lewis in London, with their studies and the use of the electrocardiograph have been able to clarify the situation considerably. Therefore, while cardiovascular disease is becoming an increasingly serious problem, additional measures are made available with which to combat it.

In discussing the paper, we are dealing with a broad subject; I merely want to give a few points on treatment. I think there is a tendency to use digitalis too sparingly. Heart disease and digitalis are so closely linked in our minds we feel that through the mere administration of the drug we have discharged our duty. Such is not the case. Unless we digitalize our patients, unless we stimulate them to the physiological limit we have not gotten the effect of digitalis fully. When Dr. Hannah spoke of digitalizing his patients he meant that he gave digitalis until he got results. In a rough way we can say that a grain of digitalis for every ten pounds of body weight is the amount a patient can stand. Some of them will need more, some less.

Digitalis has its greatest use in auricular fibrillation where its function is to block aberrant impulses that go to the ventricle. After digitalis a patient may live comfortably, but in recent years we have found that quinidine after digitalis may restore the patient to permanent health. For a while we were afraid of quinidine since deaths occurred after its administration but with the cautious use of the drug much good can be accomplished.

Edema was mentioned. Digitalis will take care of most cases of edema but not all. In the latter the diuretics are valuable.

One further point in closing: Dr. Hannah referred to the treatment of syphilitic cardiovascular disease. I have seen some rather unfortunate things follow the administration of arsenical preparations to patients with syphilitic cardiovascular disease. I would like to re-emphasize the danger of this practice. I think the best plan is to give bismuth, preferably, and mercury sometimes, then follow it up with iodides. After this regime has been carried out sufficiently long, the arsenicals can be used.

*Dr. W. S. Hannah (closing):*—Those of us to whom laboratory facilities and instruments of precision, such as the electrocardiograph and fluoroscope, are not always available should not feel that we can not make an etiologic diagnosis of the average cardiac patient. A careful history and physical examination will enable us to arrive at such diagnosis in the greater percentage of our cases.

I want to thank you for your kind attention and for your discussion of my paper.

## ACUTE APPENDICITIS IN GENERAL PRACTICE\*

## HIGH MORTALITY OF BAD MANAGEMENT

W. FRANK JORDAN, M. D.,  
Huntsville

The occurrence of appendicitis in general practice is immediately a problem of major importance. There are many factors in the successful management of nearly every case. If the case is apparently a mild attack in the beginning, the question of operation may seem debatable. Oftentimes outside considerations, economic conditions, etc., cause the family physician to temporize or fail to impress on the patient and the family the probable serious consequence and the dangers of the trouble. Again, the recurrent catarrhal appendix has made a very positive impression on the mind of the patient and his family; recommendation of an operation meets with strong opposition and often the reply, "I got well before by taking castor oil and freezing with ice." Serenely this case rests on past experience and only as a last resort can consent for an operation be obtained.

Then there is the appendix that is anatomically misplaced, as the postcecal, with pain in the back or adjacent to the ureter. The symptoms are suggestive of pathology in the urinary tract, symptoms that might point to a stone. In this case there may even be pus cells in the urine. Further, if the tip of the appendix is in the pelvis or adjacent to the ovary, difficulties in diagnosis are obvious. Failure here may rest fairly upon the doctor if he fails to recognize the true cause of the trouble. In the female, acute salpingitis, if the right tube is "first at the bat", is such a common error that in many localities it is called "Broadway Appendicitis". Frequently the condition leads to a wrong diagnosis. Fortunately, if a careful history is taken, a vaginal examination made, and the patient studied for a short time, this error can be avoided.

In very young children, appendicitis may be confused with acute gastro-enteritis and no suspicion of the true nature of the trouble entertained unless the examiner is on guard for the disease. In the light of these facts it is easily evident that

the diagnosis of appendicitis may not always be readily or correctly made. Rarely is the diagnosis a safe one if hurriedly made and based solely on pain in the abdomen.

*Etiology and Incidence:* From early infancy to old age the march of the acute appendix goes on. Epidemics may come and epidemics may go but appendicitis is constantly present, indifferent to seasons and to the ages of its victims. Naturally one wonders, why?

Highly concentrated diets, with scant amounts of fresh fruits and vegetables, and attendant constipation, are contributing factors in the cause. Influenzal infection has been followed by appendicitis in a high percentage of cases, suggesting another etiological factor. Further, tonsillar infections are noted in the history of many cases and may be responsible for the entrance of infection. Fecal concretions are found in diseased appendices sufficiently often to have a bearing. Anatomical or pathologic narrowing of the opening into the cecum, interfering with proper drainage and causing stasis and retention thus producing lowered local resistance and irritation, is likewise of significance. Small capillary hemorrhages that permit infection to enter the wall of the appendix are found in many cases.

*Symptoms:* A short reference to the nerve supply, with the phenomenon of reflex and referred pain, is of value in considering the abdominal reaction to disease. The nerves of the appendix, in common with other portions of the intestinal tract, pass up in the solar plexus, which is behind the stomach and in front of the aorta and the pillars of the diaphragm. The central communications of the solar plexus are the large splanchnic nerves and some branches of the pneumogastric. The splanchnics arise from the chain of the thoracic ganglia, which are connected by both white and gray filaments to the anterior division of the spinal nerves.

Stimuli from the appendix enter the solar plexus and after leaving it some of them take the pneumogastric route while others travel the splanchnic route to reach their receptors. The receptors of the sympathetic send out impulses to initiate the required function, such as peristalsis and gland secretion, and carry on the normal

\*Read before the Association in annual session, Birmingham, April 23, 1931.



function with no consciousness of the action.

Now, if the stimuli are excessive in quantity and intensity, some of them pass on to the spinal centers of the cord, a sensory nerve is irritated and pain is caused, but the brain accepts the message as coming from the peripheral distribution of the nerve which may be remote from the origin of the stimuli. The same may be true of the motor reflex and contraction of voluntary muscle fibers supplied by the particular branches of the nerve and not the muscle as a whole.

In the early part of the attack of appendicitis, you here find the explanation of the abdominal pain remote from the location of the appendix. Later, when the stimuli have gotten through in sufficient intensity, the pain is located at the site of the trouble. Likewise, the milder stimuli from a subacute prodromal appendix may produce gastric symptoms.

Muscle contraction resulting from visceral stimuli may continue for an indefinite time and cause a tumor-like swelling, causing the examiner to erroneously believe he feels a mass, or even the appendix. If there is accompanying hyperesthesia, resulting in pain when pressure is made, then again the examiner may think there is both rigidity and tenderness. In order to properly evaluate and understand the symptoms of appendicitis, the neuromuscular reflex must be borne in mind.

The first symptom that seriously arouses the patient's attention is pain—acute, colicky in character, and general over the abdomen. (The stimuli have gotten through the branches of the pneumogastric but the origin is not yet recognized in the visceral reflex. While the pain may be sudden, it is rarely as severe as that of a ruptured viscus.)

The so-called prodromal symptoms of appendicitis—loss of appetite and vague discomfort after eating—are in reality the early stage of appendicitis. During this stage pathological changes are quietly occurring and help explain the case that comes to operation within a few hours of the acute attack gangrenous or with a very advanced inflammatory change not in keeping with the duration of the trouble. Following the progressively severe colicky pain, nausea and vomiting generally oc-

cur. Here the visceroneuro-abdominal reflex is in evidence. The pain now is probably located in the right side and tenderness develops on pressure. Temperature of 100 to 102 generally occurs during the first several hours of the distress and is of value in diagnosis. Localized rigidity soon follows. The sequence of events—pain first, nausea and possible vomiting, tenderness, fever, then rigidity—make the classical picture and when any of these are absent or irregularly placed in the picture, it is well to search carefully for the probability of something different. If there is fever first, or vomiting, the case is not appendicitis.

As the inflammation progresses, the pulse increases in rate and gets smaller and under higher tension. The tenderness increases on pressure. This stage of the acute condition develops from the beginning to 3 or 6 hours. A white blood count is often relied upon in arriving at a diagnosis and, when combined with a differential count showing a percentage increase in neutrophils, is helpful; in the minds of many patients it is highly impressive.

John B. Murphy considered as emergency and operated on cases showing a count of as much as 14,000 even when all other symptoms were incipient. Cases showing an early count of 20,000 to 25,000, in my experience, have been due to pelvic infection. Early in the case, the patient wants relief from the suffering and the use of morphine is a great temptation. If given before the final diagnosis is made, it will tend to alter the true picture. The patient has been sick but a short time and once relieved of the pain is very likely to think that he will soon be all right. The pain once alleviated rarely returns in great severity. The patient gets relief spontaneously if the appendix ruptures but further evidence of progress of the infection is exhibited in a rigor or chill. The temperature drops, the pulse steps up, becomes smaller and there is increased tension.

The case has become a truly emergency one and, unless quickly operated, passes into the most serious complications,—a localized peritonitis with possibly abscess formation, or a spreading and diffuse peritonitis.

The rigidity of the right iliac region may quickly become board-like and general over

the abdomen; peristalsis in the region becomes silent to auscultation. Outside this region, there is increased gurgling. Tenderness is more general and less pronounced over the appendix. The patient is now vomiting more freely, the temperature recurs and the condition is most grave. If the case is seen for the first time at this stage, it is not possible to say that the appendix is the causative agent. As a consequence the physician does not have the confident command of the situation that he should have. If he knew beyond question that he was dealing with a recently ruptured appendix, he might have time to extend aid by means of an operation. In the female, the same picture might result from acute salpingitis and to defer operation at this stage is a far wiser procedure.

If the case continues for another twenty-four hours, and particularly if effort at purging is made, the picture again changes. Rigidity and tenderness give way to distention and complete absence of peristalsis. The picture now includes the "silent abdomen"—with regurgitation of intestinal contents—a low leucocyte count, scanty urine containing albumin, rapid pulse, facies peritonitis and restlessness. Generally, a fatal outcome follows in a short time.

*Diagnosis:* When there is acute pain in the abdomen, the condition is not a trivial thing. It should always be the signal for a cautious and careful search for the cause. A complete history should be taken and a thorough physical examination made of the patient in a good light, with all clothing removed. If the patient is lying on his back with his right leg flexed to remove the tension from the psoas muscle, he will not like to straighten it out.

Operation is indicated as soon as a diagnosis has been made. The earlier the diagnosis, the more opportune is the surgical relief and more greatly enhanced are the patient's chances for recovery. The wise physician will not resort to an ice-bag and morphine.

To defer operation is to subject the case to the danger of peritonitis or to abscess formation with gallons of pus and hundreds of dressings; to say nothing of hospitalization for weeks and weeks, of loss of time, of cost of nursing care, etc. Then too, even this degree of success is not always attained.

In the acute abdomen, the elimination of appendicitis is the first step since it is by far the most common of abdominal tragedies. Since indigestion is often present and the patient attributes his complaint to food taken, it is wise to consider indigestion in the differential diagnosis. In this case the symptoms which continue to be gastric are largely relieved by lavage.

A ruptured gastric or duodenal ulcer gives acute, severe abdominal pain and shock with general rigidity of the abdominal muscles. With these symptoms there is a history of ulcer.

Acute gallbladder disease shows tenderness to the left of the median line as well as over the gallbladder. Generally the pain is referred to a point under the right shoulder blade.

Ruptured ectopic pregnancy has many points in the history that assist in the differentiation, including the symptoms of internal hemorrhage and menstrual irregularity.

*Treatment:* As stated above, diagnosis means operation. There is no medical treatment that can save the patient the great risk of abscess, peritonitis and perhaps death. To ignore the grave dangers by resorting to palliative treatment, is often to invite disaster. If the appendix quietly ruptures, what soothsayer can foretell the great miracle of a localized abscess and a successful drainage later? Who is so wise that he can cure the case even in the presence of generalized spreading peritonitis?

If the mortality is to be reduced, and for the past 10 years it has not been, the hope must lie in earlier diagnosis by the general practitioner and earlier surgery. The removal of the unruptured appendix is a clean case with minimum danger and after which the fewest dangers follow.

The gangrenous, or abscessed appendix, has added a great insult to the abdomen, has made the patient toxic, and has increased the risk by many times, requiring the greatest skill and judgment to prevent a fatal outcome.

The technique of the procedure in the late cases is a matter of judgment for the operator but in general is based on the careful conservation of the barriers thrown out by nature to limit the spread of the infection; the wise placement of drainage, and



the use of the omentum for police duty, standing guard to wall off and localize.

Where the mass has formed near the superior spine of the ilium and to the outer side, it is possible in many instances to open to the outer side of the colon and evacuate the pus without in any way disturbing the median protective wall. The removal of the appendix can then be postponed to some later date.

### CONCLUSIONS

Appendicitis should be recognized as such in the early stages and operated on.

The patient must be impressed with the seriousness of the disease and the dangers that quickly attend it.

The use of morphine and an ice-bag may cause the patient to appear better temporarily but they are not to his best interest in the early stages.

The mortality following late operation for appendicitis is distressingly high and will continue despite the skill of the surgeon, unless the general practitioner brings the cases in sooner.

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### DISCUSSION

*Dr. A. S. Frasier, Dothan:* I am very much interested in the question of the high mortality in the treatment of acute appendicitis. Acute appendicitis, like the poor, is always with us and so common that we are frequently careless in our diagnosis and our treatment.

Dr. Jordan has called to our attention the fact that early diagnosis is the most important thing. There are one or two points in diagnosis I want to emphasize. The pain begins first in the umbilical region and around the epigastrium and localizes usually in the right iliac region. If the pain begins in the side or in the flank, low down, and persists there, you can almost exclude appendicitis. In a great number of cases, I do not think I have ever found an acute appendicitis where the pain began low down, even at McBurney's point, and persisted there. It is nearly always due to some other condition.

In a child the situation is not so clear. A child's omentum is not well developed and walling off does not occur. A child may have acute peritonitis a few hours after the beginning of the attack. In a child the most important physical finding is localized tenderness. If you can find localized tenderness in a child who has had pain for several hours,

I think you would be justified in operating. In fact, it is better to operate on a case of suspected acute appendicitis and make a mistake than it is to let one die.

Physicians are sometimes loath to advise operation for fear their diagnosis may not be correct. The patient should be carried to the hospital for diagnosis if there is any question at all.

Patients suspected of having appendicitis should not have a purgative. A purgative will change a mild attack into an acute one, and the question of giving purgatives should apply after the operation as well as before. I do not think a patient with appendicitis should have a purgative until recovery is complete. At the time of operation it is important to deal gently with acute cases. While I do not think the abdomen should be generally disturbed, I do think the appendix should be removed in all cases. There are many disturbing factors that follow when an appendix is left in the abdomen. With adequate help and facilities, it is as easy to remove an appendix as it is to stick a drain in, and I think the appendix should be removed.

The postoperative treatment of these cases is really more important than the operation itself. After the operation patients should have an abundance of morphine. We give them morphine every three hours, a quarter of a grain, unless the respirations fall below ten or eight in which event we regulate the dosage. This is continued until the acute conditions have subsided. If they vomit, their stomachs are washed out; sometimes a tube is put in and allowed to remain. All patients are given saline and glucose twice a day and are kept in a Fowler position. The food is limited but not absolutely prohibited.

At the time of operation, if the intestinal tract is markedly distended, it is a very good idea to draw the cecum into the wound, fix it there with one stitch and pack gauze gently around it. Either leave the wound open or use only one or two stitches. The next day, if the distention is very great and the pulse rapid, make an incision in the cecum and put in a tube. It can be done at the time of the operation but it is extremely dangerous; it is difficult to put a tube in a distended cecum without infecting the abdomen. After six hours you can open the cecum without danger. I have done this in several cases and considered the procedure a life saver.

*Dr. M. Y. Dabney, Birmingham:* I am glad Dr. Jordan limited his subject to the acute appendix. Had he included the chronic we could occupy considerable time in discussing whether or not the condition existed and what could be done for it.

There are two or three points I should like to develop. One is the question of appendicitis in children. The condition is extremely difficult to diagnose, due in part to the inability of the infant or small child to localize pain. Even if they can talk, they cannot always indicate where the pain is most severe. When the physician, who has been called late in the case, and after the condition has progressed, asks, "Where is your pain?" the child may touch almost anywhere. You do not know where the pain is. As a consequence diagnosis is difficult. If the case is frankly appendicitis and

there isn't any doubt about it, there isn't anything to do but to remove the appendix.

We know that the clinical symptom of pain in the abdomen above the navel indicates appendicitis and, as has been said, the burden of proof is on the man who says that appendicitis is not responsible; if the pain begins below the navel, even though it localizes in the lower part of the abdomen, the burden of proof is on the man who says it is appendicitis.

The question of dietary indiscretions is so important we ought always to ask the patient what he has had to eat in the last forty-eight hours. The great American sport seems to be to break the Volstead Act and, in breaking it, to mix with corn whiskey, Swiss cheese and other food products that are difficult to digest. It isn't any wonder then that a gastro-intestinal upset should follow.

If your patient gives such a history, it is not going to hurt him if you wait a few hours. Give him an enema, make him vomit a little more, then wait and see what will happen.

Pneumonia and referred pains must be considered. A certain number of appendixes are removed every year for pneumonia. This error can be avoided very largely if a careful physical examination is made.

This is an extremely interesting subject and I think Dr. Jordan is to be congratulated for the manner in which he has dealt with it.

*Dr. Brothers, Anniston:* I believe the total death rate of the State can be reduced more quickly by proper treatment of appendicitis than by the treatment of cancer. So strongly am I of this opinion that I believe appendicitis should be discussed at every meeting of physicians.

The distinctions in diagnosis that have been stressed are very few. There is very little difficulty in diagnosis in the original case. There are exceptional cases in which no one can make a diagnosis, but the percentage of these is so small as to be negligible. It isn't a serious error to make an occasional mistake and operate on a man who does not have appendicitis. I believe that in most instances the physician will easily diagnose the case. The thing we need to do is to educate the public to consent to any operation when the diagnosis is made. The general practice seems to be for the surgeon to lay the responsibility on the general practitioner who makes the diagnosis. I believe that is a mistake. The public should be educated to the great importance of having an immediate diagnosis made in order that the question may be settled and proper steps taken.

*Dr. T. E. Tucker, Monroeville:* There is one thing I would like for Dr. Jordan to mention in closing the discussion. Dr. Frasier spoke of the importance of postoperative care. Recently, I knew of one case in particular in which a lung abscess followed a pus appendix in about ten days or two weeks; two weeks before that I knew of another where a severe lobar pneumonia, I believe with both lungs involved, followed a pus appendix case.

I would like for the essayist in closing to mention the relative frequency of such sequelae.

*Dr. B. F. Anderson, Sellers:* It seems that the discussion has centered on diagnosis. I rely on examinations of the blood and urine to assist me in differentiation. Certain it is that kidney involvement as a possibility can be eliminated by urinalysis.

*Dr. Mayfield:* Referring to the blood count, it is not infrequent to find in certain cases a very low count. Further, in studying the blood picture, the number of eosinophils must be taken into consideration. I have seen one case diagnosed appendicitis which on operation revealed a cecum full of worms. Discussing differential diagnosis, Archer says, "I have operated for appendicitis and found gall stones and vice versa. It is not infrequent to operate and find an enlarged gallbladder when the case has been diagnosed appendicitis." I have done that myself.

I do not know whether the doctor mentioned it but pain on the left side occurring in appendicitis lies low in the pelvis. Sometimes you will get pain in the left side of the pelvis instead of the right, and pneumonia must be considered. In one instance I prepared to operate but before doing so called a consultant who examined the chest of the patient and found pneumonia. Every chest should be examined before a final diagnosis is made.

*Dr. Jordan (closing):* I appreciate the discussion of the paper and have little to add other than a point regarding pneumonia as a sequela. If pneumonia follows, the anesthetic is brought into question. The state of toxicity of the patient, perhaps, has weight also.

Laboratory findings, in my experience, are subordinate to clinical symptoms. However, in the differential, which should always be made, a high percentage of polymorphonuclear leucocytes should arouse suspicion.

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Mead's Powdered Brewer's Yeast.—In the announcement of acceptance of Mead's Powdered Brewer's Yeast by the Council on Pharmacy and Chemistry (Jour. A. M. A. May 2, 1931, p. 1477) it was erroneously stated that this product assays approximately 1 vitamin B<sub>2</sub> (G unit) per Gm. It should have read 10 instead of 1. It was also erroneously stated that the unit of vitamin B<sub>1</sub> used for that amount of substance which, added to the diet of rats showing symptoms induced by deficiency of B<sub>1</sub> (F) would give an average weekly gain in weight of 3 Gm. for eight weeks. This should have read 11 to 14 Gm. instead of 3 Gm. Another error was that the product offers not less than 0.98 unit of vitamin B<sub>2</sub>(G) per gram. This should have read 10 units instead of 0.98 unit. (Jour. A. M. A., July 11, 1931, p. 103.)



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## YELLOW FEVER HEROES

The recent death on August 17 of Aristides Agramonte, aged 63, the great Cuban physician who had come to New Orleans as head of the department of tropical diseases in the new medical school of the University of Louisiana, carries to his final reward the last survivor of the four immortals who in 1900 proved that yellow fever is transmitted by the *Aedes aegypti*, formerly known as the *Stegomyia fasciata*, or *calopus*, mosquito. The passing of Agramonte brings up memories of the days when pestilence carried death and disaster to Alabama and the other Gulf States every few years. The medical profession and all mankind should not forget nor cease to appreciate the heroism of Walter Reed, James Carroll, Jesse Lazear and Aristides Agramonte, who risked their lives that the scourge of the tropics and the dread of the inhabitants of our temperate Southland might be discovered and conquered.

A great Alabamian, Josiah Nott of Mobile, one of the founders of the Medical College of Alabama, the Medical Department of the University of Alabama for more than half a century, announced in 1848 his belief that the fevers of the South may be due to the bite of the mosquito but apparently his suggestion was forgotten. It was Carlos Finlay of Havana who traced the source of yellow fever to the bite of one species of the mosquito, then known as the *Stegomyia fasciata*, and though considered a "crank" by his confreres he fought for his theory until Walter Reed was persuaded

to undertake the epoch making experiments which solved the yellow fever problem.

William Crawford Gorgas, an Alabamian, the "Savior of the Tropics", and Henry Rose Carter, a Virginian, who was said to have known more about yellow fever than any man that has ever lived, belong with the yellow fever heroes of history. Sir Auckland Geddes, British Ambassador to the United States, said: "The present era will go down in history as the dawn of the age of sanitation, and the name of Gorgas will be revered when the military heroes of the World War have been forgotten." Gorgas, the modest Southern gentleman, however, always gave due credit to his confreres. On the occasion of the unveiling of a bust of Gorgas in the Surgeon General's Library during the World War, William H. Welch, Frank Billings and others paid tribute to the genius and achievement of their Chief. General Gorgas, much embarrassed, was called on, and pointing to a portrait of Walter Reed said: "While others have been praising me I have been thinking that had it not been for Walter Reed and Henry R. Carter the sanitation of Havana and the Canal Zone would not have been possible."

It requires a finer type of courage to go into fever-stricken cities from which thousands are fleeing, and administer to the needs of the sick and dying, than to face the fire of shot and shell in battle array. The brave deeds of the heroes who fought and gave their lives for their country are written in song and story but the valor of the yellow fever heroes, who served their country just as faithfully, is forgotten. There is nothing finer in the annals of history than the records made by physicians in Mobile, Montgomery, Birmingham, and Decatur, who without exception remained at their posts of duty in various epidemics of yellow fever. All of them risked their lives and many whose names have been forgotten died that others might live.

Illustrating the ingratitude of the public for the heroism of physicians during yellow fever epidemics may be mentioned the fact that in a cemetery in Decatur there lies side by side in unmarked graves four physicians who made the supreme sacrifice in the epidemic of 1888. It is the duty of the physicians of Alabama to right this wrong and when the present period of

depression has passed the Medical Association of the State of Alabama should raise funds to at least purchase markers for the graves of these four heroes who have left a proud heritage to the medical profession of their state. When that is done it would be fitting as a mark of honor for the Association to meet in Decatur and hold appropriate exercises at the cemetery, commemorating the deeds of glory of these four forgotten martyrs of their profession.

Among the heroes of yellow fever history always will be two of Alabama's great sanitarians, Jerome Cochran and William H. Sanders. For nearly half a century in many epidemics, Cochran and Sanders led the fight to protect the lives and property of the citizens of their State. Cochran was recognized as the greatest authority of his time on yellow fever control; and the rules of quarantine and the methods of fumigation which he promulgated were accepted and employed by city, state and national boards of health wherever the dreaded "yellow jack" made its appearance.

The last of the yellow fever martyrs was Hideyo Noguchi, who gave up his life in his efforts to find the organism that is transmitted from the mosquito to man in the production of yellow fever. It seemed at one time as if Noguchi's *Leptospira icteroides* would be accepted as the causative germ of yellow fever, though Agramonte and others protested that it could not be the yellow fever parasite. While Noguchi had not abandoned his *Leptospira icteroides* theory he was searching for other organisms that could cause the disease when he came to his untimely death. Whether Noguchi found the yellow fever germ or not, his fame is secure as one of the greatest bacteriologists of all times and as one of the heroes of medical history.

Gorgas dreamed of eradicating yellow fever from the world; and the International Health Board of the Rockefeller Foundation, which is cooperating with the governments of the few remaining strongholds of the disease on the west coast of Africa and the west coast of South America, intends to carry on until Gorgas' dream is realized. There is reason to hope that the complete conquest of yellow fever will be accomplished in a few years. Certain it is that the Gulf Coast cities of the United States feel secure from future epidemics

of the formerly dreaded "yellow jack"; and the South, Alabama in particular, should be proud of the medical heroes who have served and sacrificed in driving from our shores the spectre of tropical pestilence.

S. H.

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#### THE RELATION OF THE STATE LABORATORIES TO THE MEDICAL PROFESSION

Dr. George E. Vincent, who but recently retired as president of the Rockefeller Foundation, has said: "The extent to which the public diagnostic laboratory is used is one index of the social-mindedness of the medical profession in the area which the laboratory serves". If this be true then the medical profession of Alabama has, indeed, a high sense of its social obligations.

Last year (1930) the nine laboratories of the Alabama State Board of Health received for examination over 282,000 specimens, or 112 per 1000 of population. While the largest number of any one kind of examination was for hookworm, serological tests for syphilis were a close second, followed by cultures and agglutination tests for typhoid, microscopic examinations for malaria, and cultures for diphtheria. The number of specimens to be examined for tubercle bacilli is far too few, and the percentage of positives (20%) is too high. This indicates, on the one hand, that an insufficient number of specimens from suspected cases are examined, and, furthermore, that the disease, in many instances, is far advanced, in a stage when examination of the sputum is unnecessary to establish the diagnosis. Many repeated sputum examinations are often necessary before the bacilli are found. When it is remembered that their appearance in the sputum occurs only when a tubercle has ruptured into a bronchiole, it is clear that a case may be far advanced before a positive sputum is obtained. While it is true that a diagnosis should be made by other means whenever possible, it is important to know if the patient is an "open" case with the consequent increased danger of infection to immediate contacts.

It must always be remembered that the laboratory can never make the diagnosis, nor should it aspire to do so. The evidence obtained from any laboratory test or examination constitutes a part, and only a part, of the clinical picture. The physician



himself must assemble the evidence obtained from all sources, the interpretation of which then leads to the diagnosis. A negative report does not exclude the clinical condition suspected. It only means that a careful examination failed to reveal the evidence in that particular specimen. If the clinical symptoms warrant, additional specimens should always be obtained.

The clinician, on his part, has an obligation to the laboratory, in the use of care and thought in the collection of the specimen. Every laboratory could, doubtless, materially increase its efficiency and obtain more accurate results if all specimens which it is required to examine were properly collected and sent to the laboratory without delay. This consideration includes, of course, the avoidance of those factors which mitigate against intelligent work, such as collection of the specimen at the wrong stage of the disease, when a positive result could not be expected, as, for example, a Widal test during the first few days of a febrile attack, or a blood culture during the fourth week of typhoid. Another instance is the collection of saliva or mucus instead of the actual pulmonary secretions for tubercle bacilli.

A second major activity of the State Laboratories, which has developed rapidly within the last year or two, is the work of the vaccine division. Typhoid vaccine, diphtheria toxoid, rabies vaccine, Schick toxin and tuberculin are now furnished for free distribution within the State of Alabama. In 1930, about one million cubic centimeters of typhoid vaccine and 450,000 cc. of toxoid were manufactured. The production of rabies vaccine, begun in February of this year, has reached in the first six months, a total of 1475 treatments.

Any discussion of the activities of the State Laboratories would be incomplete without mention of a third important activity, namely, research. No laboratory can stay abreast of the rapid progress being made today without provision for study of new activities and investigation of new methods. All diagnostic procedures are the result of research and the development of the Alabama state-wide service is due, in considerable part, to special investigations. New methods for the isolation of the typhoid bacillus, an improved method for making diphtheria toxoid, an evalua-

tion of the hookworm problem of the State by counties—the first time that such a study has been made anywhere—improvements in the technic of serological tests for syphilis, a serological test for the differentiation of smallpox and chickenpox; these are some of the contributions which have been made from the Alabama State Laboratories.

Few states have such a complete state-wide laboratory service as Alabama. Its present high place is the result of the wholehearted support of the medical profession and with continued cooperation there should be corresponding progress in service rendered.

L. C. H.

## Current Comment

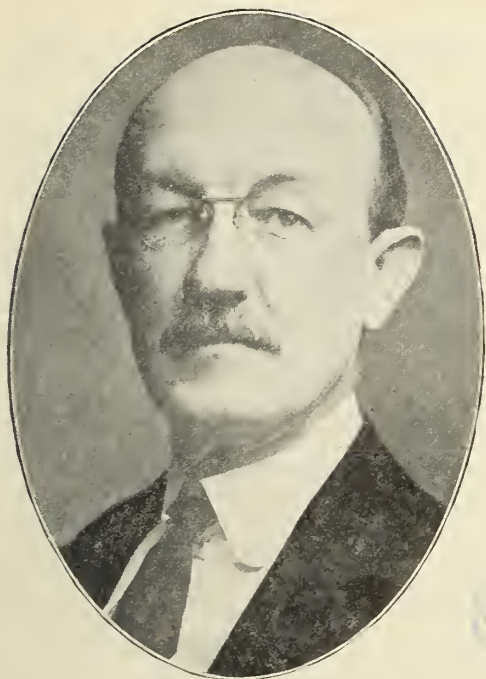
### POOR ECONOMY

(From *The Talladega Daily Home*, Sept. 18)

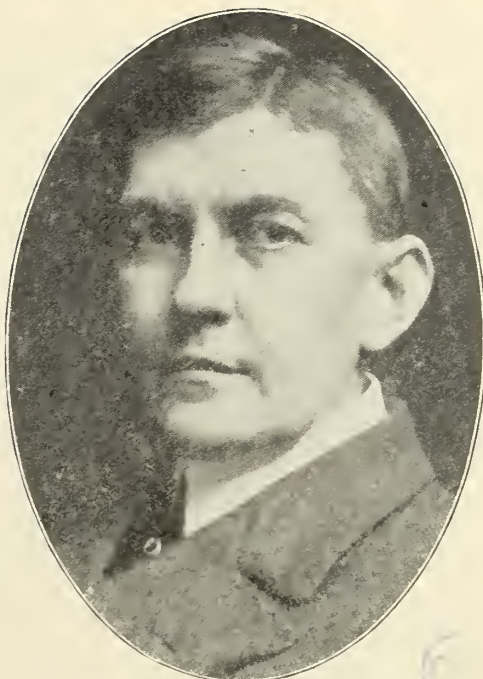
We notice that in one or more counties of the state the boards of revenue, as economy measures, have withdrawn appropriations for county agents, health and child welfare workers. To any county which contemplates such a step we would suggest that the officials think long and well before they take it. They are destroying agencies which have stood for the physical, mental and moral welfare of their people, and if they permit the work to be stopped they not only largely lose the benefit of what has been accomplished in the past, but will certainly find themselves slipping backward among forward looking counties.

There could not possibly be more important work in a county than that of advancing its agricultural classes, looking after the health of its people and the welfare of its children, many of whom are found in such environment that if they are not looked after by trained workers, they are in a good way to become liabilities rather than assets to the county.

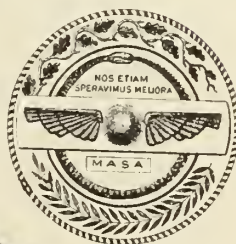
Surely a county that is not hopelessly bankrupt morally as well as financially can find other ways for economizing than destroying these helpful and necessary agencies. If it comes to a pinch where expenses must be cut there are other things, however important they may be, that should feel the pruning knife before these activities that are designed to add to the sum of human health, happiness and prosperity.



B. J. BALDWIN, Montgomery  
1891-1892



E. D. BONDURANT, Mobile  
1905-1906



W. S. BRITT, Eufaula  
1922-1923



J. D. HEACOCK, Birmingham  
1924-1925

PAST PRESIDENTS OF THE ASSOCIATION



## PROCEEDINGS OF THE ASSOCIATION

TRANSACTIONS OF THE SIXTY-FOURTH CONSECUTIVE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA, HELD AT BIRMINGHAM, APRIL 21-24, 1931.

(Continued from the September number and concluded in this issue.)

### Fourth Day—Friday, April 24

The Association, sitting as the Board of Health of the State of Alabama, was called to order at 8:30 A. M. by President Harrison.

The list of registered counsellors and delegates entitled to vote was read by the Secretary and approved by the body.

The report\* of the Board of Censors was rendered by the Chairman of the Board, Dr. W. D. Partlow.

The next order of business being the revision of the rolls of the Association, the Secretary was instructed by President Harrison to proceed without interruption unless there were objections. As a preface to the revision of the Roll of County Societies, the Secretary said: "County Medical Societies, to comply with the Constitution, must meet certain obligations. First, an annual report, on forms furnished by the Association, must be filed with the Secretary of the parent body; second, each society is expected to be represented at the annual meeting by at least one delegate; third, fees must be paid to the Treasurer of the Association for each delegate to which the Society is entitled; and fourth, dues are to be remitted for each member". With this foreword, the revision proceeded.

#### 1. Revision of the Roll of County Societies:

(a) County societies which have fulfilled all their constitutional obligations: Baldwin, Barbour, Eibb, Blount, Bullock, Butler, Calhoun, Chambers, Cherokee, Chilton, Choctaw, Clarke, Coffee, Colbert, Conecuh, Coosa, Covington, Crenshaw, Cullman, Dale, Dallas, DeKalb, Elmore, Escambia, Etowah, Fayette, Franklin, Henry, Houston, Jackson, Jefferson, Lamar, Lauderdale, Lawrence, Lee, Limestone, Lowndes, Macon, Madison, Marengo, Marion, Marshall, Mobile, Monroe, Montgomery, Morgan, Perry, Pickens, Pike, Randolph, Russell, Shelby, St. Clair, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, Washington, Wilcox, Winston.

\*The report of the Board of Censors appeared in the July number.

No objection being made as to the correctness of this report, the president ordered that these counties be passed, as clear on the books.

(b) County societies partially delinquent: Autauga, representation; Clay, delegate dues; Cleburne, delegate dues for one; Geneva, representation; Greene, delegate dues for one; Hale, representation.

No objection being made as to the correctness of this report, the president ordered that these counties be passed, with an understanding that the secretary and treasurer make an effort to remove the delinquencies.

(c) County societies totally delinquent: None.

Thereupon, the Secretary said: "In revising the Roll of the College of Counsellors, five lists are prepared, designated respectively: (1) The schedule of counsellors clear of the books in regard to attendance and dues; (2) The schedule of delinquent counsellors—counsellors delinquent in attendance or dues, or against whom charges may be pending; (3) The schedule of miscellaneous counsellors—counsellors who have died since the last annual meeting, or have offered their resignation, or have moved out of the State or out of their respective congressional districts; (4) The schedule of active counsellors of twenty years standing; and (5) The schedule of counsellors-elect who have qualified as provided in the Constitution." With such preface, the revision was continued.

#### 2. Revision of the Roll of Counsellors:

(a) Counsellors clear of the books: Acker, Alison, Ashcraft, Bailey, Bedsole, Brothers, Broughton, Burdeshaw, Caldwell, Cannon, Cardon, Chandler, Chenault, Crutcher, Cryer, Cunningham, Dabney, Doughty, Dowling, Dupree, Faulk, Gordon, Grace, Gragg, Granger, Greer, Gresham, Hagood, Hamrick, Hayes, C. P., Hayes, J. P., Heacock, Heflin, Hendrick, Hill, Hollis, Howell, Hubbard, Hutchinson, Jackson, James, A. D., James, N. G., Jordan, Leach, Lester, Lightfoot, Long, Lull, Lupton, Martin, Mason, E. M., Mason, J. M., Mayer, McAdory, McCall, McLeod, McLester, Meigs, Miles, Miller, Morris, Moxley, Newman, Noel, Nolen, Oates, Price, Ralls, Redden, Robertson, Rountree, Rucker, Sankey, Scott, Searcy, Shropshire, Sledge, Smith, Speir, Tankersley, Taylor, Thomas, Tucker,

Turner, Waldrop, Walker, Walls, Ward, Watkins, White, Wilkerson, Williams, Williamson, Wright.

In the absence of objection, the President ordered the names of these counsellors, reported as clear of the books, passed.

(b) Delinquent counsellors: None.

(c) Miscellaneous counsellors:

(1) Life Counsellors who have died: Julius Jones, R. J. Redden and R. L. Sutton.

(2) Active Counsellors who have died: None.

(3) Active Counsellors who have moved: G. C. Marlette.

(4) Active Counsellors who have resigned: None.

(d) Active Counsellors of twenty years standing: J. C. McLeod.

(e) Counsellors-elect who have properly qualified: J. S. Hough.

President Harrison directed that the names of Drs. Jones, Redden and Sutton be transferred from the Book of the Living to the Book of the Dead; that, in the absence of objection, the name of Dr. G. C. Marlette be removed from the roll, the name of Dr. J. C. McLeod be transferred to the Roll of Life Counsellors, and that the name of Dr. J. S. Hough be added to the Roll of Active Counsellors.

Revision of the Roll of Correspondents was next in order. By action of the Association, the name of Dr. Walter E. Sis-trunk, who delivered the Jerome Cochran Lecture in 1930, was added to such roll.

The concluding item under Revision of Rolls was revision of the Roll of Officers. The following officers were elected, the president for one year; the vice president of the Southeastern Division for four years, and the Censors for five years:

President—Toulmin Gaines, Mobile.

Vice President—Southeastern Division—G. W. Williamson, Hartford.

Censors—D. T. McCall, Mobile; J. S. McLester, Birmingham.

The election of counsellors, nominated as provided in the Constitution, resulted as follows:

From the Second District: M. H. Hagood, Brew-ton; Sibley Holmes, Bay Minette; E. L. Kelly, Evergreen.

From the Fifth District: J. J. Walls, Alexander City.

From the Ninth District: E. M. Mason, Birming-ham; W. S. Rountree, Wylam.

From the Tenth District: R. L. Hill, Winfield.

President Harrison asked Dr. W. W. Har-per and Dr. Glenn Andrews to escort Presi-dent-Elect Gaines to the chair. Dr. Gaines, after a brief speech in which he expressed appreciation of the honor conferred, pre-sented Drs. Williamson, McCall and McLes-ter to the Association.

Whereupon at 12:30 P. M. the Associa-tion adjourned to meet in Mobile, April 19-22, 1932.

## REGISTRATION AT THE SIXTY-FOURTH CONSECUTIVE ANNUAL SESSION

Birmingham, April 21-24, 1931

### LIFE COUNSELLORS

Andrews, Glenn, Montgomery  
Baker, J. N., Montgomery  
Blake, W. H. Sr., Sheffield  
Bondurant, E. D., Mobile  
Cameron, M. B., Eutaw  
DeWeese, T. P., Gamble Mines  
Givhan, E. G., Montevallo  
Green, Henry, Dothan  
Guice, C. L., Gadsden

Harlan, A. L., Alexander City  
Harper, W. W., Selma  
Harris, Seale, Birmingham  
Harrison, W. G., Birmingham  
Heflin, Wyatt, Birmingham  
Hill, L. L., Montgomery  
Hill, R. S., Montgomery  
Howle, J. A., Falkville  
Jones, C. C., Birmingham

Justice, O. S., Central  
McElrath, W. S., Cedar Bluff  
Mohr, C. A., Mobile  
Partlow, W. D., Tuscaloosa  
Ray, J. U., Woodstock  
Talley, D. F., Birmingham  
Thigpen, C. A., Montgomery  
Wilkinson, D. L., Birmingham

### ACTIVE COUNSELLORS

Alison, S. B., Minter  
Ashcraft, V. L., Reform  
Bailey, E. B., Demopolis  
Brothers, T. J., Anniston  
Broughton, L. E., Andalusia  
Burdeshaw, S. L., Headland  
Caldwell, E. V., Huntsville  
Cannon, D. L., Montgomery  
Cardon, S. G., Centre  
Chandler, Joel, Columbiana  
Chenault, F. L., Decatur

Crutcher, J. S., Athens  
Cryer, G. A., Anniston  
Cunningham, W. M., Corona  
Dabney, M. Y., Birmingham  
Doughty, M. E., Slocomb  
Dowling, J. D., Birmingham  
Dupree, M. W., Athens  
Faulk, W. M., Tuscaloosa  
Gordon, S. A., Marion  
Grace, M. O., Ozark  
Granger, F. G., Ashford

Gresham, G. L., Andalusia  
Hagood, M. H., Brewton  
Hamrick, R. H., Birmingham  
Hatchett, W. C., Huntsville  
Hayes, C. P., Elba  
Hayes, J. P., Clanton  
Heacock, J. D., Birmingham  
Heflin, H. T., Birmingham  
Hill, R. L., Winfield  
Hough, J. S., Livingston  
Howell, W. E., Haleyville



Hubbard, T. B., Montgomery  
 Hutchinson, W. H., Childersburg  
 Jackson, A. A., Florence  
 James, A. D., Choctaw  
 James, N. G., Hayneville  
 Jordan, J. W., Ashland  
 Leach, Sydney, Tuscaloosa  
 Lester, B. S., Birmingham  
 Lull, Cabot, Birmingham  
 Lupton, F. A., Birmingham  
 Martin, J. C., Cullman  
 Mason, E. M., Birmingham  
 Mason, J. M., Birmingham  
 Mayer, K. A., Lower Peach Tree  
 McCall, D. T., Mobile  
 McLester, J. S., Birmingham

Miles, W. C., Oneonta  
 Moxley, J. B., Brantley  
 Newman, S. H., Dadeville  
 Noel, W. E., Boaz  
 Noland, Lloyd, Birmingham  
 Nolen, J. A. M., Alexander City  
 Oswalt, G. G., Mobile  
 Price, A. B., Gordo  
 Ralls, A. W., Gadsden  
 Rountree, W. S., Birmingham  
 Rucker, E. W., Birmingham  
 Sankey, H. J., Nauvoo  
 Scott, W. F., Birmingham  
 Searcy, G. H., Tuscaloosa  
 Searcy, H. B., Tuscaloosa  
 Shropshire, C. W., Birmingham

Sledge, E. S., Mobile  
 Speir, P. V., Greenville  
 Taylor, W. R., Town Creek  
 Tucker, J. S., Moffat  
 Turner, J. P., Cropwell  
 Waldrop, R. W., Bessemer  
 Walker, A. A., Birmingham  
 Walls, J. J., Alexander City  
 Ward, H. S., Birmingham  
 Watkins, J. M., Troy  
 White, A. L., Thomasville  
 Whitman, C. R., Tuscumbia  
 Wilkerson, Fred, Montgomery  
 Williamson, G. W., Hartford  
 Wright, L. R., Heflin

## DELEGATES

Baldwin: John Chason, Bay Minette  
 Barbour: J. S. Tillman, Clio  
 Bibb: W. B. Buntin, West Blocton; C. W. Jones, West Blocton.  
 Blount: N. C. Denton, Oneonta; C. V. Hendrix, Oneonta  
 Bullock: W. H. McCaslan, Union Springs  
 Butler: L. V. Stabler, Greenville  
 Calhoun: C. Hal Cleveland, Anniston; W. M. Salter, Anniston  
 Chambers: J. M. Poer, West Point  
 Cherokee: S. C. Tatum, Centre  
 Chilton: J. J. DuBose, Maplesville; T. J. Marcus, Clanton  
 Choctaw: W. G. Carnathan, Butler; H. W. Robinson, Edna  
 Clarke: R. A. Irons, Thomasville; G. C. McCrary, Jackson  
 Cleburne: F. R. Wood, Heflin  
 Coffee: W. A. Lewis, Enterprise; W. A. Stanley, Enterprise  
 Colbert: D. T. Boozer, Sheffield; W. T. Burkett, Tuscumbia  
 Conecuh: W. R. Carter, Repton; E. L. Kelly, Evergreen  
 Coosa: J. A. R. Chapman, Goodwater; J. W. Maddox, Rockford  
 Covington: J. C. Hurst, Opp; G. C. Nix, Opp  
 Crenshaw: A. J. Jones, Highland Home  
 Cullman: R. A. Culpepper, Cullman; J. W. Wood, Hanceville  
 Dale: A. J. Morris, Newton; W. L. Orr, Ozark  
 Dallas: J. R. Chisolm, Selma; L. T. Lee, Selma; P. B. Moss, Selma  
 DeKalb: J. E. Buzbee, Crossville  
 Elmore: W. S. Owsley, Eclectic; J. F. Sewell, Wetumpka

Escambia: J. O. Lisenby, Atmore; C. E. Sellers, McCullough  
 Etowah: T. Y. Greet, Gadsden; M. P. Hughes, Gadsden  
 Fayette: O. E. Newton, Fayette  
 Franklin: J. R. Sherman, Phil Campbell; N. P. Underwood, Russellville  
 Greene: G. A. Moore, Eutaw  
 Henry: L. P. Shell, Abbeville; W. C. Vickers, Abbeville  
 Houston: M. L. Cummins, Ashford; V. J. Thacker, Dothan  
 Jackson: Rayford Hodges, Scottsboro; W. C. Williams, Bridgeport  
 Jefferson: H. W. Allgood, Fairfield; C. J. Colquitt, Bessemer; W. L. Cowles, Birmingham; J. R. Garber, Birmingham; S. L. Ledbetter, Jr., Birmingham; D. S. Moore, Birmingham; J. D. Sherrill, Birmingham  
 Lamar: W. L. Box, Bedford; J. A. Jackson, Vernon  
 Lauderdale: W. J. Callaway, Florence; H. M. Simpson, Florence  
 Lawrence: R. E. Harper, Moulton; J. F. Huey, Hillsboro  
 Lee: G. H. Moore, Opelika  
 Limestone: W. J. Donald, Athens; W. E. Maples, Athens  
 Lowndes: E. F. Leatherwood, Hayneville  
 Macon: E. S. Miller, Tuskegee  
 Madison: C. A. Grote, Huntsville; W. M. McKissack, Huntsville  
 Marengo: W. T. Cocke, Demopolis; E. T. Norman, Linden  
 Marion: G. W. Mixon, Hackleburg; L. L. Parks, Hamilton  
 Marshall: J. M. Crawford, Arab; A. L. Isbell, Albertville

Mobile: J. Mac Bell, Mobile; R. P. Lester, Mobile; E. L. McCafferty, Mt. Vernon  
 Monroe: T. E. Tucker, Monroeville  
 Morgan: E. M. Chenault, Decatur; John Kimbrough, Hartselle  
 Montgomery: W. A. Gunter, Montgomery; W. S. Hannah, Montgomery; J. A. Martin, Montgomery; C. K. Weil, Montgomery  
 Perry: R. C. Hanna, Marion; C. B. Robinson, Marion  
 Pickens: J. L. Conyers, Carrollton; L. C. Davis, Gordo  
 Pike: T. D. McKnight, Brundidge  
 Randolph: W. W. Stevenson, Roanoke  
 Russell: John Prather, Seale  
 Shelby: J. M. Kimmey, Columbiana; C. O. Lawrence, Calera  
 St. Clair: Frank Stitt, Pell City; J. A. Watson, Springville  
 Sumter: J. C. McDaniel, York; R. D. Spratt, Livingston  
 Talladega: D. P. Dixon, Talladega; R. C. Stewart, Sylacauga  
 Tallapoosa: J. A. Chapman, Alexander City; W. D. Wood, Camp Hill  
 Tuscaloosa: J. L. Thomas, Holt; C. E. Abbott, Tuscaloosa.  
 Walker: A. E. Ballard, Coal Valley  
 Washington: W. J. Blount, Millry; W. E. Kimbrough, St. Stephens  
 Wilcox: E. G. Donald, Pine Apple; E. L. McIntosh, Camden  
 Winston: T. M. Blake, Double Springs; T. E. Snoddy, Haleyville

MEMBERS

A

Acker, C. T., Montevallo  
Acton, W. H., Alabama City  
Anderson, B. F., Sellers  
Anthony, J. C., Birmingham  
Arbery, C. G., Anniston  
Argo, J. R., Birmingham  
Armour, W. S., Birmingham  
Atwood, A. L., Birmingham  
Auston, P. W., Montgomery

B

Ballard, I. C., Gadsden  
Banks, Joe, Dadeville  
Barfield, J. M., Lineville  
Bates, I. C., Dothan  
Becton, J. A., Birmingham  
Beddow, W. H., Birmingham  
Belue, J. O., Athens  
Benedict, S. R., Birmingham  
Berrey, I. C., Birmingham  
Berrey, R. R., Birmingham  
Berry, W. T., Birmingham  
Bird, Cosby, Montgomery  
Black, J. W., Ensley  
Blake, W. H. Jr., Sheffield  
Blue, Geo. E., Montgomery  
Blue, J. H., Bessemer  
Board, O. P., Birmingham  
Boggess, J. W., Woodstock  
Booth, J. L., Elrod  
Boulware, T. M., Birmingham  
Bowman, J. L., Montgomery  
Boyd, Hugh, Scottsboro  
Bradford, B. R., Birmingham  
Bradford, D. C., Birmingham  
Branch, J. L., Montgomery  
Brannon, R. M., Birmingham  
Bridges, T., Boothton  
Brindley, T. B., Hartselle  
Bristow, B. T., Bessemer  
Brooks, Clyde, University  
Burns, W. A., Birmingham

C

Caffee, W. M., Mulga  
Caine, V. H., Burnt Corn  
Campbell, E. B., Birmingham  
Cantrell, W. T., Alabama City  
Carmichael, J. L., Fairfield  
Carmichael, J. N., Fairfield  
Carpenter, B. S., Fairfield  
Carr, D. D., Lafayette  
Carraway, C. N., Birmingham  
Carter, H. R. Jr., Birmingham  
Carter, M. B., Birmingham  
Casey, T. A., Altoona, Rt. 2  
Chamblee, Z. B., Birmingham  
Chapman, J. C., Birmingham  
Chapman, J. P., Birmingham  
Chapman, W. S., Birmingham  
Chason, O. L., Opelika  
Chilton, D. H., Parrish  
Christopher, F. E., Bolinger  
Clark, N. G., Ensley

Clayton, E. C., Leeds  
Clements, F. H., Birmingham  
Cloud, R. E., Ensley  
Clyde, W. A., Fairfield  
Cobbs, B. W., Montgomery  
Cocke, J. G., Fairfield  
Cocke, N. P., Birmingham  
Coleman, G. C., Fairfield  
Collier, Dana, Birmingham  
Collins, Edgar, Birmingham  
Collins, Thos., Birmingham  
Comer, R. T., Birmingham  
Ccmpton, W. W., Fairfield  
Constantine, K. W., Birmingham  
Conwell, H. E., Fairfield  
Conwill, G. B., Majestic  
Cooper, J. B., Birmingham  
Coyle, D. J., Birmingham  
Crelly, H. C., Birmingham  
Crowder, J. W., Bessemer  
Cunningham, J. N., Birmingham  
Curtis, R. C., Calera

D

Daly, E. W., Birmingham  
Daves, J. G., Cullman  
Davidson, A. W., Birmingham  
Davidson, M. T., Birmingham  
Davie, N. T., Anniston  
Davis, E. W., Birmingham  
Davis, J. D. S., Birmingham  
Dawson, J. R., Birmingham  
Dean, Leon, Ensley  
Denman, H. J., Flat Top  
Denney, J. L., Alexander City  
Denson, F. H., Bessemer  
Dodson, R. B., Cullman  
Donnelly, C. A., Birmingham  
Donald, D. C., Birmingham  
Donald, P. Y., Selma  
Donald, T. C., Bessemer  
Dcnehoo, J. H., Birmingham  
Douglas, G. F., Birmingham  
Douglas, John, Birmingham  
Dowling, H. B., Mobile  
Drake, C. H., Birmingham  
Drennen, Earle, Birmingham  
Durrett, E. B., Bessemer

E

Edmonson, J. H., Birmingham  
Elgin, C. E., Praco  
Elliott, J. B., Falkville  
Embry, J. C., Vincent  
Eskeew, M. W., Uniontown

F

Fargason, C. C., Dadeville  
Faris, W. E., Birmingham  
Farnsworth, T. K., Birmingham  
Ferguson, Burr, Birmingham  
Fitzgerald, W. L., Trussville  
Fonville, W. D., Birmingham  
Ford, C. H., Birmingham  
Forney, J. M., Tuscaloosa.

Foster, J. M., Birmingham  
Frank, H. W., Gadsden  
Frasier, A. S., Dothan

G

Gaines, Toulmin, Mobile  
Garlington, R. B., Brilliant  
Garlington, W. H., Birmingham  
Garmon, C. N., Bessemer  
Garrison, J. E., Birmingham  
Gaston, C. D., Birmingham  
Gay, J. S., Ashford  
Geddes, W. S., Birmingham  
Gehrken, H. S., Birmingham  
Gill, D. G., Montgomery  
Gipson, A. C., Gadsden  
Givhan, E. G. Jr., Birmingham  
Gladney, J. C., Jasper  
Glasgow, M. W., Fairfield  
Glasgow, T. J., Belgreen  
Glass, E. T., Birmingham  
Glaze, A. L., Birmingham  
Goodall, Gordon, Birmingham  
Graham, B. E., Gurley  
Graham, G. S., Birmingham  
Graves, A. W., Gadsden  
Gravlee, I. M., Fairfield  
Grayson, A. T., New Market  
Grayson, R. J., Selma  
Green, A. H., Birmingham  
Green, Elbert P., Birmingham  
Green, E. Pierce, Jacksonville  
Gresham, W. A., Russellville  
Griffin, R. J., Moundville  
Gwin, J. W., Bessemer  
Gwin, P. E., Sumiton

H

Hairston, W. G., Birmingham  
Hall, G. W., Buhl  
Hamner, L. H., Camp Hill  
Hamrick, R. A., Birmingham  
Hanby, E. K., Attalla  
Hanna, H. P., Birmingham  
Hardin, S. T., Tuscaloosa  
Hardy, W. B., Birmingham  
Hargis, E. H., Birmingham  
Harper, W. F., Selma  
Harris, C. A., Bessemer  
Harris, Charlton, Birmingham  
Harris, D. B., Munford  
Harris, E. A., Bessemer  
Harris, E. N., Bessemer  
Harris, F. W., Birmingham  
Harris, H. A., Ensley  
Haun, C. A., Birmingham  
Havens, L. C., Montgomery  
Hays, J. H., Birmingham  
Hays, R. B., Birmingham  
Head, W. C., Bessemer  
Heath, M. J., Ensley  
Hill, J. H., Talladega  
Hill, R. Lee, Haleyville  
Hogan, E. P., Birmingham  
Holding, B. F., Montgomery



Hollis, L. W., Mobile  
Howard, P. J., Mobile  
Huey, T. F., Anniston  
Hughes, W. P., Russellville  
Hyatt, E. M., Albertville

## I

Issos, D. N., Birmingham

## J

Jackson, A. C., Jasper  
Jackson, B. F., Montgomery  
Jackson, C. B., Jasper  
Jackson, H. L., Birmingham  
Jackson, L. F., Birmingham  
Jenkins, J. F., Birmingham  
Jenkins, L. A., Birmingham  
Johns, L. J., Birmingham  
Johnson, N. S., Clanton  
Johnson, W. B., Birmingham  
Johnston, N. A., Adamsville  
Jones, I. N., Greensboro  
Jones, W. C., Birmingham  
Jones, W. N., Birmingham  
Jordan, J. S., Birmingham  
Jordan, W. F., Huntsville

## K

Kay, F. A., Tuscaloosa  
Kenan, Jas., Selma  
Kennedy, Hughes, Birmingham  
Kesmodel, K. F., Birmingham  
Killian, C. D., Ft. Payne  
Killough, J. N., Birmingham  
Kilpatrick, G. C., Mobile  
Kimbrough, R. M., Birmingham  
King, C. O., Birmingham  
Kinkead, K. J., Birmingham  
Kirby, L. E., Birmingham

## L

Lacey, E. P., Bessemer  
Lamar, C. L., Birmingham  
Lavender, C. B., Fairfield  
Lavender, W. A., Birmingham  
Lawrence, Toombs, Tuscaloosa  
Lawrence, W. O., Leeds  
Ledbetter, S. L., Magnolia Springs  
Leland, Joseph, Birmingham  
Levy, Harry, Birmingham  
Lewis, C. F., Birmingham  
Lewis, H. J., Birmingham  
Lewis, T. K., Birmingham  
Leyden, H. A., Anniston  
Linn, J. E., Birmingham  
Lister, R. H., Birmingham  
Little, E. G., Blossburg  
Little, J. H., Mobile  
Littlejohn, W. S., Birmingham  
Littlepage, G. F., Sheffield  
Locke, W. W., Birmingham  
Long, J. R., Marion  
Long, W. W., Birmingham  
Love, J. T., Birmingham  
Lovelady, R. G., Birmingham  
Lovett, W. J., Sipsey  
Lynch, M. H., Scottsboro

## M

Magruder, T. V., Birmingham  
Major, W. B., Birmingham  
Malloy, M. L., Fairfield  
Mann, S. H., Ensley  
Marsh, J. S., Collinsville  
Marshall, W. L., Langdale  
Martin, A. P., Cullman  
Martin, H. F., Birmingham  
Martin, H. L., Birmingham  
Martin, J. H., Selma  
Martin, R. A., Pell City  
Martin, W. A., Birmingham  
Martin, W. B., Warrior  
Massey, B. J., New Brocton  
Mauensee, A. E., Birmingham  
Maxwell, Alston, Tuscaloosa  
McDaniel, J. C., Birmingham  
McElhenney, T. J., Bessemer  
McGahey, T. P., Birmingham  
McGehee, H. T., Birmingham  
McLaughlin, J. D., Blue Springs  
McLellan, T. R., Aliceville  
McNeill, R. B., Jemison  
McPheeters, S. B., Montgomery  
McQueen, J. P., Birmingham  
Meadows, J. A., Birmingham  
Mehaffey, J. W., Birmingham  
Meigs, J. H., Dixiana  
Meigs, S. C., Centerville  
Meyer, Jerome, Birmingham  
Miller, J. E., Huntsville  
Mitchell, H. E., Birmingham  
Mitchell, J. I., Birmingham  
Moody, Maxwell, Tuscaloosa  
Moore, C. W. C., Talladega  
Mocre, E. M., Clayton  
Moore, H. G., Dixiana  
Morgan, J. R., Birmingham  
Morland, H. C., Birmingham  
Moseley, E. E., Birmingham  
Moseley, S. O., Selma  
Moss, P. B., Selma  
Motley, S. D., Birmingham  
Murphree, C. L., Gadsden  
Murphy, G. E., Birmingham

## N.

Neely, M. G., Bessemer, Rt. 2  
Nettles, W. D., McKenzie  
Newfield, S. U., Birmingham  
Nice, C. M., Birmingham  
Nicholls, W. L., Woodward  
Norton, E. N., Fairfield

## O

O'Connell, Edward, Birmingham  
Orton, A. E., Birmingham  
Owens, A. H., Ashland  
Owens, S. W., Ashland

## P

Parker, Robert, Montgomery  
Parnell, C. N., Maplesville  
Parsons, J. L., Woodward  
Parsons, W. C., Birmingham

Partlow, R. C., Tuscaloosa  
Peck, Willena, Montevallo  
Perdue, J. D., Mobile  
Porch, R. D., Sylacauga  
Posey, J. F., Anniston  
Pow, J. R., Woodward  
Prescott, W. E. Sr., Birmingham  
Prescott, W. E. Jr., Birmingham  
Purser, Thomas, Birmingham

## R

Ragsdale, L. V., Bessemer  
Ransom, W. W., Birmingham  
Ray, E. A., Birmingham  
Reagan, Cas, Birmingham  
Reaves, J. U., Mobile  
Riggs, F. W., Birmingham  
Rivers, T. D., Montgomery  
Roan, A. M., Decatur  
Robbins, J. E., Ensley  
Robert, W. P., Fairfield  
Robbins, W. J., Florence  
Robertson, B. O., Birmingham  
Roe, L. W., Mobile  
Rosser, W. J., Birmingham  
Rowe, Mercer, Gadsden  
Rudolph, C. M., Birmingham  
Rush, J. O., Mobile  
Russell, R. O., Birmingham  
Russell, T. J., Somerville

## S

Salter, P. P., Eufaula  
Scales, J. P., Livingston  
Scarbrough, B. C., Albertville  
Scholar, T. E., Centerville  
Scofield, T. F., Birmingham  
Scott, E. Lawrence, Birmingham  
Scott, E. M., Birmingham  
Segrest, G. O., Mobile  
Seibold, J. L., Birmingham  
Sellers, H. G., Birmingham  
Sellers, I. J., Birmingham  
Sellers, N. E., Anniston  
Sellers, W. D., Birmingham  
Sewell, T. H., Tarrant  
Shepherd, R. H., Townley  
Shepherd, S. T., Birmingham.  
Shipp, J. N., New Market  
Sibley, B. D., Birmingham  
Sims, A. G., Fairfield  
Skinner, I. C., Selma  
Skinner, P. B., Fairhope  
Simpson, J. W., Birmingham  
Smaha, T. G., Birmingham  
Smith, C. H., Birmingham  
Smith, Greene, Ensley  
Smith, H. R., Birmingham  
Smith, J. C., Birmingham  
Smith, M. E., America  
Snoddy, J. S., Haleyville  
Snow, J. W., Helena  
Snow, J. W. Jr., Palos  
Somerville, J. H., Tuscaloosa  
Sorrell, L. E., Birmingham  
Sowell, J. L., Jasper  
Sparks, D. H., Ensley

Sparks, W. A., Sayre  
Speir, R. C., Birmingham  
Stabler, A. L., Birmingham  
Stephens, S. H., Mobile  
Stewart, O. E., Cordova  
Stiles, M. P., Birmingham  
Stough, T. J., Montgomery  
Street, T. H., Alexander City  
Stubbins, S. G., Birmingham  
Swedlaw, H., Birmingham  
Sudduth, T. H., Hanceville  
Suggs, S. D., Montgomery  
Sumner, I. C., Chatom

T

Tankersley, F. M. T., Montgomery  
Taylor, G. M., Prattville

Thomas, A. E., Maben  
Trumper, A., Montgomery

V

Vance, J. G., Birmingham

W

Wainwright, S. P., Birmingham  
Waldrop, A. M., Jasper  
Walker, A. M., Tuscaloosa  
Walker, Carey, Huntsville  
Walker, L. M., Jasper  
Walls, W. W., New Hope  
Walsh, Groesbeck, Fairfield  
Ward, J. A., Birmingham  
Warren, W. E., Birmingham  
Washam, J. M., Talladega  
Watkins, J. H., Montgomery  
Watkins, M. A., Birmingham

Watson, Jerre, Anniston  
Wickliffe, T. F., Jasper  
Wiley, C. C., Birmingham  
Wilkinson, W. W., Montgomery  
Wilkinson, H. B., Montgomery  
Wilkinson, J. G., Birmingham  
Wilks, A. E., Birmingham  
Williams, D. C., Birmingham  
Williams, K. B., Hartford  
Williams, M. B., Centerville  
Williamson, G. W., Bessemer  
Wilson, F. C., Birmingham  
Wilson, L. E., Birmingham  
Wilson, O. E., Birmingham  
Wilson, W. E., Montgomery  
Woodruff, G. G., Anniston  
Woodson, L. G., Birmingham  
Woodson, R. C., Birmingham  
Wynn, A. L., Florala

VISITORS

Dr. L. E. Burch, Nashville  
Dr. N. B. Burchfield, Birmingham  
Dr. B. S. Cooley, Birmingham  
Dr. W. W. Deal, Tuscaloosa  
Dr. C. E. Dowman, Atlanta  
Dr. Kendall Emerson, New York  
Dr. W. E. Findeison, U. S. Navy  
Dr. J. B. Greene, Asheville  
Dr. A. R. Haisfield, Pensacola  
Dr. T. H. Payne, Birmingham  
Dr. V. B. Philpot, Mississippi  
Dr. M. Hines Roberts, Atlanta  
Dr. W. K. Sharp, U. S. P. H. S.  
Dr. S. S. Sisson, Florida  
Dr. J. N. Statum, Pratt City  
Dr. J. S. Turbeville, Florida  
Dr. W. C. Walker, Mississippi  
Dr. A. Zimmerman, Grant  
Mrs. J. M. Akin  
Mrs. H. W. Allgood  
Mrs. B. F. Anderson  
Mrs. John Argo  
Mrs. W. S. Armour  
Mrs. R. F. Ashworth  
Mrs. D. C. Batson  
Mrs. J. A. Becton  
Mrs. J. W. Black  
Mrs. F. E. Blue  
Mrs. A. C. Branyon  
Mrs. T. J. Brothers  
Mrs. W. M. Caffee  
Mrs. W. S. Chapman  
Mrs. F. L. Chenault  
Mrs. C. J. Colquitt

Mrs. M. D. Clements  
Mrs. Sid Collier  
Mrs. M. Y. Dabney  
Mrs. Gordon Daves  
Mrs. F. H. Denson  
Mrs. Drayton Doherty  
Mrs. G. F. Douglas  
Mrs. H. B. Dowling  
Mrs. E. B. Durrett  
Mrs. T. K. Farnsworth  
Mrs. H. F. Gaines  
Mrs. J. R. Garber  
Mrs. W. H. Godwin  
Mrs. Gordon Goodall  
Mrs. Richard Grayson  
Mrs. R. J. Griffin  
Mrs. S. E. Grout  
Mrs. E. H. Hargis  
Mrs. Blue Harris  
Mrs. C. A. Harris  
Mrs. Seale Harris  
Mrs. W. G. Harrison  
Mrs. R. B. Hays  
Mrs. R. S. Hill  
Mrs. H. W. Howell  
Mrs. T. F. Huey  
Mrs. B. F. Jackson  
Mrs. Jno. Jenkins  
Mrs. W. B. Johnson  
Mrs. C. O. King  
Mrs. K. J. Kinkead  
Mrs. C. F. Lewis  
Mrs. W. A. Lewis  
Mrs. R. H. Lister

Mrs. W. W. Locke  
Mrs. John Love  
Mrs. W. B. Majors  
Mrs. H. F. Martin  
Mrs. J. C. Martin  
Mrs. L. H. Mayo  
Mrs. T. J. McElhenney  
Mrs. E. P. Eniry  
Mrs. J. P. McQueen  
Mrs. J. W. Mehaffey  
Mrs. S. U. Newfield  
Mrs. W. L. Nicholls  
Mrs. W. L. Orr  
Mrs. J. L. Parsons  
Mrs. J. D. Perdue  
Mrs. W. E. Prescott, Sr.  
Mrs. Clay Ragsdale  
Mrs. Cas Reagan  
Mrs. T. D. Rivers  
Mrs. B. O. Robertson  
Mrs. Mack Rogers  
Mrs. W. J. Rosser  
Mrs. Mercer Rowe  
Mrs. R. O. Russell  
Mrs. J. P. Scales  
Mrs. T. F. Scofield  
Mrs. Jim Seay  
Mrs. C. W. Shropshire  
Mrs. C. H. Smith  
Mrs. H. R. Smith  
Mrs. J. W. Snow  
Mrs. D. F. Talley  
Mrs. H. S. Ward  
Mrs. J. S. Winters

The Sixty-Fifth Consecutive Annual Session of the  
Association will convene in Mobile, April 19-22, 1932



SUMMARY OF ANNUAL ATTENDANCE

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1910	10	44	83	157	51	344	Mobile
1911	14	53	66	139	19	291	Montgomery
1912	16	63	92	348	40	559	Birmingham
1913	7	49	83	124	17	280	Mobile
1914	16	67	85	226	20	414	Montgomery
1915	32	74	108	429	49	692	Birmingham
1916	19	66	92	106	41	306	Mobile
1917	18	64	96	199	32	499	Montgomery
1918	27	63	87	257	44	471	Birmingham
1919	22	43	87	91	102	348	Mobile
1920	16	61	59	85	51	272	Anniston
1921	26	65	73	183	58	405	Montgomery
1922	26	72	76	314	68	556	Birmingham
1923	14	48	66	106	50	284	Mobile
1924	29	70	84	230	79	492	Montgomery
1925	27	78	97	328	113	643	Birmingham
1926	33	74	105	194	131	537	Mobile
1927	36	85	104	252	87	564	Montgomery
1928	33	77	108	507	106	831	Birmingham
1929	19	69	102	176	109	466	Mobile
1930	32	83	106	286	102	609	Montgomery
1931	26	80	116	410	158	790	Birmingham

THE ROLL OF COUNSELLORS

REVISION OF 1931

LIFE COUNSELLORS

Name and Address	Date of Election
Andrews, Glenn, Montgomery (2)	1893
Baker, J. N., Montgomery (2)	1905
Baldwin, Benj. Jas., Montgomery (2)	1886
Betts, William Frank, Evergreen (2)	1904
Blake, Wyatt Heflin, Sheffield (8)	1892
Bondurant, Eugene DuBose, Mobile (1)	1894
Britt, W. S., Eufaula (3)	1905
Cameron, Matthew Bunyan, Eutaw (6)	1893
Davie, Mercer Stillwell, Dothan (3)	1904
DeWeese, Thos. Peters, Gamble Mines (10)	1890
Givhan, Edgar Gilmore, Montevallo (4)	1903
Green, Henry, Dothan (3)	1900
Guice, Charles Lee, Gadsden (7)	1899
Harlan, Aaron LaFayette, Alexander City (5)	1898
Harper, Wm. Wade, Selma (4)	1902
Harris, Elisha McCullough, Russellville (10)	1904
Harris, Seale, Birmingham (9)	1903
Harrison, William Groce, Birmingham (9)	1896
Heflin, Wyatt, Birmingham (9)	1893
Hill, Luther Leonidas, Montgomery (2)	1888
Hill, Robert Somerville, Montgomery (2)	1898
Howle, James Augustus, Falkville (8)	1895
Jones, Capers Capehart, East Lake (9)	1881
Justice, Oscar Suttle, Central (5)	1896
McCain, William Jasper, Livingston (6)	1898
McElrath, William Sparke, Cedar Bluff (7)	1908
McLeod, John Calvin, Bay Minette (2)	1911
Mohr, Chas. A., Mobile (1)	1909
Partlow, William Dempsey, Tuscaloosa (6)	1909
Petey, Frank Paul, Decatur (8)	1909
Pride, William Thomas, Madison (8)	1899

Name and Address	Date of Election
Prince, Edward Mortimer, Birmingham (9)	1909
Ray, Jacob Ussery, Woodstock (6)	1906
Simms, Benjamin Britt, Talladega (4)	1901
Stewart, John Pope, Attalla (7)	1908
Talley, Dyer Findley, Birmingham (9)	1902
Thigpen, Charles Alston, Montgomery (2)	1900
Wilkinson, David Leonidas, Birmingham (9)	1902
Wilkinson, John Edward, Prattville (5)	1892

ACTIVE COUNSELLORS

Those marked with an asterisk (\*) are serving second terms.

	Date of Elec- tion	Expi- ration
Acker, Paul Jerome Morris, Mobile (1)	*1930	to 1937
Alison, Samuel Blakemore, Minter (4)	*1926	to 1933
Ashcraft, Virgil Lee, Reform (10)	*1926	to 1933
Bailey, E. B., Demopolis (1)	1928	to 1935
Bedsole, James Goodman, Jackson (1)	*1929	to 1936
Brothers, Thomas J., Anniston (4)	1914	
Broughton, Lewis Edward, Andalusia (2)	1916	
Burdeshaw, Shelby L., Headland (3)	*1928	to 1935
Caldwell, Edwin Valdivia, Huntsville (8)	*1925	to 1932
Cannon, Douglas L., Montgomery (2)	1928	to 1935
Cardon, S. C., Center (7)	1916	
Chandler, Joel C., Columbiana (4)	*1930	to 1937
Chenault, Frank L., Albany (8)	1917	
Crutcher, John Sims, Athens (8)	1915	
Cryer, George A., Anniston (4)	1925	to 1932
Cunningham, William Moody, Corona (10)	1912	
Dabney, Marye Y., Birmingham (9)	*1930	to 1937
Doughty, Mordecai Edward, Slocomb (3)	*1929	to 1936
Dowling, Judson Davis, Birmingham (9)	*1929	to 1936
Dupree, Marion W., Athens (8)	*1930	to 1937
Faulk, William M., Tuscaloosa (6)	1913	
Gordon, Samuel A., Marion (6)	1913	
Grace, Malcolm O., Ozark (3)	*1930	to 1937
Gragg, Vincent Jones, Clanton (4)	*1928	to 1935
Granger, F. G., Ashford (3)	1928	to 1935
Greer, William H., Sheffield (8)	*1927	to 1934
Gresham, George L., Andalusia (2)	1913	
Hagood, M. H., Brewton (2)	*1931	to 1938
Hamrick, Robert Hampton, Birmingham (9)	*1929	to 1936
Hatchett, Wm. C., Huntsville (8)	1929	to 1936
Hayes, Charles Phillips, Elba (3)	*1927	to 1934
Hayes, Julius Poe, Clanton (4)	*1927	to 1934
Heacock, Jos. D., Birmingham (9)	1912	
Heflin, Howell T., Birmingham (9)	1914	
Hendrick, Walter Branham, Hurtsboro (3)	1915	
Hill, Robert L., Winfield (10)	*1931	to 1938
Hollis, Jonathan Shelton, Covin (10)	*1930	to 1937
Hough, James Spencer, Livingston (6)	1930	to 1937
Howell, William Edward, Haleyville (10)	*1925	to 1932
Hubbard, T. Brannon, Montgomery (2)	1925	to 1932
Hutchinson, Wm. H., Childersburg (4)	*1929	to 1936
Jackson, Alva A., Florence (8)	*1925	to 1932
James, Ashley D., Choctaw (1)	1915	
James, Norman Gilchrist, Hayneville (5)	*1928	to 1935
Jordan, Joseph Wiley, Ashland (5)	1925	to 1932
Leach, Sydney, Tuscaloosa (6)	*1927	to 1934
Lester, Belford S., Birmingham (9)	*1930	to 1937
Lightfoot, Phillip Malcolm, Shorter (5)	*1925	to 1932
Long, Clarence, Hurtsboro (3)	*1927	to 1934
Lull, Cabot, Birmingham (9)	*1926	to 1933
Lupton, Frank A., Birmingham (9)	1913	
Martin, James Cordie, Cullman (7)	1917	

ACTIVE COUNSELLORS—Continued

Those marked with an asterisk (\*) are serving second terms.

	Date of Elec- Expi- tion ration
Mason, E. M., Birmingham (9).....	*1931 to 1938
Mason, James Monroe, Birmingham (9).....	*1925 to 1932
Mayer, Kossuth Aaron, Lower Peach Tree (2).....	*1926 to 1933
McAdory, Edward Dudley, Cullman (7).....	*1927 to 1934
McCall, Daniel T., Mobile (1).....	*1930 to 1937
McLester, James Somerville, Birmingham (9).....	1913
Miles, W. C., Oneonta (7).....	1928 to 1935
Miller, W. T., Ft. Payne (7).....	1928 to 1935
Morris, William E., Georgiana (2).....	1913
Moxley, Joseph Benjamin, Brantley (2).....	*1928 to 1935
Newman, Samuel Harris, Dadeville (5).....	1925 to 1932
Noel, W. E., Boaz (7).....	1928 to 1935
Noland, Lloyd, Fairfield (9).....	1929 to 1936
Nolen, John A. M., Alexander City (5).....	*1927 to 1934
Oates, William Henry, Mobile (1).....	1913
Oswalt, G. G., Mobile (1).....	1929 to 1936
Price, Albert Bascom, Gordo (10).....	*1926 to 1933
Ralls, Arthur W., Gadsden (7).....	*1926 to 1933
Redden, Raymond Hollis, Sulligent (10).....	1926 to 1933
Robertson, James Wiley, Clayton (3).....	1925 to 1932
Rountree, W. S., Wylam (9).....	*1931 to 1938
Rucker, Edmon W., Birmingham (9).....	*1929 to 1936
Sankey, Howard J., Nauvoo (10).....	1914
Scott, Walter F., Birmingham (9).....	*1929 to 1936
Searcy, Geo. H., Tuscaloosa (6).....	1929 to 1936
Searcy, Harvey Brown, Tuscaloosa (6).....	*1930 to 1937
Shropshire, Courtney William, Birmingham (9).....	*1930 to 1937
Sledge, Edward Simmons, Mobile (1).....	*1929 to 1936
Smith, Russell Aubrey, Brewton (2).....	*1925 to 1932
Speir, Phillip V., Greenville (2).....	1917
Tankersley, James, Prattville (5).....	1928 to 1935
Taylor, Woodie R., Town Creek (8).....	1925 to 1932
Thomas, Eugene Marvin, Prattville (5).....	*1927 to 1934
Tucker, John S., Camp Hugh (6).....	1926 to 1933
Turner, James Perry, Cropwell (7).....	1912
Waldrop, R. W., Bessemer (9).....	*1929 to 1936
Walker, Alfred A., Birmingham (9).....	*1930 to 1937
Walls, J. J., Alexander Ctiy (5).....	*1931 to 1938
Ward, Henry Silas, Birmingham (9).....	1915
Watkins, James Monroe, Troy (2).....	1915
White, Alexander L., Thomasville (1).....	1928 to 1935
Whitman, Clayborne R., Tuscumbia (8).....	1929 to 1936
Wilkinson, Fred Wooten, Montgomery (2).....	*1926 to 1933
Williams, Mark Johnson, Oxford (4).....	*1927 to 1934
Williamson, George W., Hartford (3).....	*1925 to 1932
Wright, Lee Roy, Heflin (4).....	*1929 to 1936

COUNSELLORS-ELECT

Holmes, Sibley, Bay Minette (2).....	1931 to 1938
Kelly, Edward Lamar, Evergreen (2).....	1931 to 1938

THE ROLL OF THE COLLEGE OF COUNSELLORS BY CONGRESSIONAL DISTRICTS

On this roll the names of the Counsellors are given by Congressional Districts. It is intended to serve as a guide in the election of new Counsellors, with a view to the distribution of them in approximate proportion to the number of members in the several districts. It is not considered to be good policy, and it is not considered to be fair and right, to give a few large towns greatly more than their prorata share of Counsellors. The calculations are

based on the nearest whole number. On April 1, 1931, there were 1,674 members in the county medical societies. That would give one Counsellor to every 17 members.

FIRST DISTRICT

*Names of Counsellors*—A. D. James, Choctaw; J. G. Bedsole, A. L. White, Clarke; E. B. Bailey, Marengo; E. S. Sledge, W. H. Oates, P. J. M. Acker, D. T. McCall, and G. G. Oswalt, Mobile.

County	Members	Counsellors
Choctaw .....	11	1
Clarke .....	15	2
Marengo .....	16	1
Mobile .....	86	5
Monroe .....	17	0
Washington .....	7	0
Total members.....	145	9

SECOND DISTRICT

*Names of Counsellors*—Sibley Holmes, Baldwin; W. E. Morris and P. V. Speir, Butler; E. L. Kelly, Conecuh; G. L. Gresham and L. E. Broughton, Covington; J. B. Moxley, Crenshaw; M. H. Hagood and R. A. Smith, Escambia; T. B. Hubbard, F. W. Wilkerson, Douglas L. Cannon, Montgomery; J. M. Watkins, Pike; K. A. Mayer, Wilcox.

County	Members	Counsellors
Baldwin .....	15	1
Butler .....	16	2
Conecuh .....	10	1
Covington .....	24	2
Crenshaw .....	14	1
Escambia .....	21	2
Montgomery .....	83	3
Pike .....	21	1
Wilcox .....	18	1
Total.....	212	14

THIRD DISTRICT

*Names of Counsellors*—J. W. Robertson, Barbour; C. P. Hayes, Coffee; M. O. Grace, Dale; M. E. Doughty and G. W. Williamson, Geneva; S. L. Burdeshaw, Henry; F. G. Granger, Houston; Clarence Long and W. B. Hendrick, Russell.

County	Members	Counsellors
Barbour .....	15	1
Bullock .....	8	0
Coffee .....	15	1
Dale .....	15	1
Geneva .....	18	2
Henry .....	11	1
Houston .....	30	1
Lee .....	16	0
Russell .....	4	2
Total.....	112	9

FOURTH DISTRICT

*Names of Counsellors*—T. J. Brothers, M. J. Williams and G. A. Cryer, Calhoun; J. P. Hayes and V. J. Cragg, Chilton; L. R. Wright, Cleburne; S. B. Alison, Dallas; J. C. Chandler, Shelby; W. H. Hutchinson, Talladega.



County	Members	Counsellors
Calhoun .....	44	3
Chilton .....	11	2
Cleburne .....	3	1
Dallas .....	39	1
Shelby .....	16	1
Talladega .....	30	1
Total.....	143	9

FIFTH DISTRICT

*Names of Counsellors*—James Tankersley and E. M. Thomas, Autauga; J. W. Jordan, Clay; N. G. James, Lowndes; P. M. Lightfoot, Macon; J. A. M. Nolen, J. J. Walls and S. H. Newman, Tallapoosa.

County	Members	Counsellors
Autauga .....	8	2
Chambers .....	17	0
Clay .....	10	1
Coosa .....	4	0
Elmore .....	17	0
Lowndes .....	6	1
Macon .....	11	1
Randolph .....	12	0
Tallapoosa .....	21	3
Total.....	106	8

SIXTH DISTRICT

*Names of Counsellors*—J. S. Tucker, Bibb; S. A. Gordon, Perry; J. S. Hough, Sumter; W. M. Faulk, Sydney Leach, H. B. Searcy and G. H. Searcy, Tuscaloosa.

County	Members	Counsellors
Bibb .....	14	1
Greene .....	6	0
Hale .....	8	0
Perry .....	8	1
Sumter .....	15	1
Tuscaloosa .....	46	4
Total.....	97	7

SEVENTH DISTRICT

*Names of Counsellors*—W. C. Miles, Blount; S. G. Cardon, Cherokee; J. C. Martin and E. D. McAdory, Cullman; W. T. Miller, DeKalb; A. W. Ralls, Etowah; W. E. Noel, Marshall; J. P. Turner, St. Clair.

County	Members	Counsellors
Blount .....	13	1
Cherokee .....	6	1
Cullman .....	22	2
DeKalb .....	14	1
Etowah .....	46	1
Marshall .....	14	1
St. Clair .....	11	1
Total.....	126	8

EIGHTH DISTRICT

*Names of Counsellors*—W. H. Greer and C. R. Whitman, Colbert; A. A. Jackson, Lauderdale; W. R. Taylor, Lawrence; J. S. Crutcher and M. W. Dupree, Limestone; E. V. Caldwell and W. C. Hatchett, Madison; F. L. Chenaault, Morgan.

County	Members	Counsellors
Colbert .....	21	2
Jackson .....	13	0
Lauderdale .....	23	1
Lawrence .....	11	1
Limestone .....	14	2
Madison .....	35	2
Morgan .....	29	1
Total.....	146	9

NINTH DISTRICT

*Names of Counsellors*—F. A. Lupton, J. S. McLester, H. T. Heflin, H. S. Ward, J. M. Mason, J. D. Heacock, Cabot Lull, R. W. Waldrop, R. H. Hamrick, W. F. Scott, E. W. Rucker, J. D. Dowling, M. Y. Dabney, B. S. Lester, C. W. Shropshire, Alfred A. Walker, E. M. Mason, W. S. Rountree, Lloyd Noland.

County	Members	Counsellors
Jefferson .....	421	19

TENTH DISTRICT

*Names of Counsellors*—J. S. Hollis, Fayette; R. H. Redden, Lamar; R. L. Hill, Marion; V. L. Ashcraft and A. B. Price, Pickens; W. M. Cunningham and H. J. Sankey, Walker; W. E. Howell, Winston.

County	Members	Counsellors
Fayette .....	8	1
Franklin .....	17	0
Lamar .....	13	1
Marion .....	16	1
Pickens .....	16	2
Walker .....	46	2
Winston .....	13	1
Total.....	129	8

THE ROLL OF CORRESPONDENTS

"Distinguished members of the medical profession residing outside of the State, and Counsellors of the Association, who after not less than ten years of faithful service may have resigned their counsellorships, shall be eligible for election as Correspondents.

"Correspondents shall have the privilege of transmitting or presenting to the Association such communications, or scientific essays, as they may deem proper."—*From the Constitution.*

Name and Address	Date of Election
Andrew J. Coley, Oklahoma City.....	1909
George H. Price, Nashville.....	1921
W. S. Thayer, Baltimore.....	1921
Robert Abbe, New York.....	1921
Lewellys F. Barker, Baltimore.....	1921
Frank S. Meara, New York.....	1921
Rudolph Matas, New Orleans.....	1921
Frank Smithies, Chicago.....	1921
John B. Elliott, Jr., New Orleans.....	1921
Howard A. Kelly, Baltimore.....	1921
Wm. J. Mayo, Rochester, Minn.....	1921
George E. Bushnell, Bedford, Mass.....	1921

George W. Crile, Cleveland, Ohio.....	1921
Henry A. Christian, Boston.....	1921
J. Whitridge Williams, Baltimore, Md.....	1921
Chas. H. Mayo, Rochester, Minn.....	1922
J. D. S. Davis, Birmingham.....	1924
James S. Stone, Boston.....	1925
H. A. Royster, Raleigh, N. C.....	1926
Stewart Roberts, Atlanta.....	1927
G. Canby Robinson, Nashville.....	1928
John B. Deaver, Philadelphia.....	1928
Louis B. Wilson, Rochester, Minn.....	1930
Walter E. Sistrunk, Dallas, Texas.....	1931

SCHEDULE OF THE ANNUAL SESSIONS  
AND PRESIDENTS SINCE THE RE-  
ORGANIZATION IN 1868

<i>Place and President</i>	<i>Year</i>
Selma—Albert Galatin Mabry.....	1868
Mobile—Albert Galatin Mabry.....	1869
Montgomery—Richard Frazer Michel.....	1870
Mobile—Francis Armstrong Ross.....	1871
Huntsville—Thomas Childress Osborne.....	1872
Tuscaloosa—George Ernest Kumppe.....	1873
Selma—George Augustus Ketchum.....	1874
Montgomery—Job Sobieski Weatherly.....	1875
Mobile—John Jefferson Dement.....	1876
Birmingham—Edward Davies McDaniel.....	1877
Eufaula—Peter Bryce.....	1878
Selma—Robert Wickens Gaines.....	1879
Huntsville—Edmund Pendleton Gaines.....	1880
Montgomery—William Henry Anderson.....	1881
Mobile—John Brown Gaston.....	1882
Birmingham—Clifford Daniel Parke.....	1883
Selma—Mortimer Harvey Jordan.....	1884
Greenville—Benjamin Hogan Riggs.....	1885
Anniston—Francis Marion Peterson.....	1886
Tuscaloosa—Samuel Dibble Seelye.....	1887
Montgomery—Edward Henry Sholl.....	1888
Mobile—Milton Columbus Baldrige.....	1889
Birmingham—Charles Higgs Franklin.....	1890
Huntsville—William Henry Sanders.....	1891
Montgomery—Benjamin James Baldwin.....	1892
Selma—James Thomas Searcy.....	1893
Birmingham—Thaddeus Lindley Robertson.....	1894
Mobile—Richard Matthew Fletcher.....	1895
Montgomery—William Henry Johnston.....	1896
Selma—Barekley Wallace Toole.....	1897
Birmingham—Luther Leonidas Hill.....	1898
Mobile—Henry Altamont Moody.....	1899
Montgomery—John Clarke LeGrande.....	1900
Selma—Russell McWhorter Cunningham.....	1901
Birmingham—Edwin Lesley Marechal.....	1902
Talladega—Glenn Andrews.....	1903
Mobile—Matthew Bunyan Cameron.....	1904
Montgomery—Capers Capehart Jones.....	1905
Birmingham—Eugene DuBose Bondurant.....	1906
Mobile—George Tighlman McWhorter.....	1907
Montgomery—Samuel Wallace Welch.....	1908
Birmingham—Benjamin Leon Wyman.....	1909
Mobile—Wooten Moore Wilkerson.....	1910
Montgomery—Wyatt Heflin Blake.....	1911
Birmingham—Lewis Coleman Morris.....	1912
Mobile—Harry Tutwiler Inge.....	1913
Montgomery—Robert S. Hill.....	1914
Birmingham—Benjamin Britt Simms.....	1915
Mobile—James Norment Baker.....	1916

<i>Place and President</i>	<i>Year</i>
Montgomery—Henry Green.....	1917
Birmingham—William Dempsey Partlow.....	1918
Mobile—Isaac LaFayette Watkins.....	1919
Anniston—James Somerville McLester.....	1920
Montgomery—Louis William Johnston.....	1921
Birmingham—Dyer F. Talley.....	1922
Mobile—Walter S. Britt.....	1923
Montgomery—W. W. Harper.....	1924
Birmingham—J. D. Heacock.....	1925
Mobile—C. A. Mohr.....	1926
Montgomery—A. L. Harlan.....	1927
Birmingham—John D. S. Davis.....	1928
Mobile—E. V. Caldwell.....	1929
Montgomery—L. E. Broughton.....	1930
Birmingham—W. G. Harrison.....	1931

SECRETARIES OF THE MEDICAL ASSOCIA-  
TION OF THE STATE OF ALABAMA

1852-1854.....	George A. Ketchum
1854-1855.....	R. Miller
1869-1873.....	Jerome Cochran
1874-1878.....	B. H. Riggs
1879-1892.....	T. A. Means
1893-1897.....	J. R. Jordan
1897-1904.....	G. P. Waller
1904-1906.....	L. C. Morris
1906-1915.....	J. N. Baker
1915-1923.....	H. G. Perry
1923-1924.....	Douglas L. Cannon
1924-1930.....	B. B. Simms
1930-.....	Douglas L. Cannon

TREASURERS OF THE MEDICAL ASSOCIA-  
TION OF THE STATE OF ALABAMA

1854-1855.....	W. P. Reese
1869-1898.....	W. C. Jackson
1898-1915.....	H. G. Perry
1915-.....	J. U. Ray

SCHEDULE OF JEROME COCHRAN  
LECTURERS

1899—J. T. Searcy, Tuscaloosa—What Is Insani- ty?
1900—Wm. Osler, Baltimore—Not present.
1901—Wm. Osler, Baltimore—Not present.
1902—Nathan Bozeman, New York—Declined.
1903—George H. Price, Nashville—The History of Medicine.
1904—W. S. Thayer, Baltimore—Cardiac and Vascular Complications of Typhoid Fever.
1905—Robert Abbe, New York—The Problems of Surgery.
1906—Joseph Collins, Boston—Arteriosclerosis.
1907—Nicholas Senn, Chicago—Final Triumph of Scientific Medicine.
1908—E. L. Marechal, Mobile—Absent.
1909—Lewellys F. Barker, Baltimore—Clinical Methods of Cardiac Investigation.
1910—Frank S. Meara, New York—Some Prob- lems of Nutrition in Early Life.
1911—Rudolph Matas, New Orleans—Inflamma- tory Tuberculosis.
1912—Maurice H. Richardson, Boston—Elimina- tion of Preventable Disasters from Surgery.



1913—L. L. Hill, Montgomery—Surgical Complications and Sequelae of Typhoid Fever.

1914—Frank Smithies, Chicago—Contributions of the Twentieth Century to the Better Understanding of Gastric Cancer.

1915—John B. Elliott, Jr., New Orleans—Abscess of Liver.

1916—Howard A. Kelly, Baltimore—Radium Therapy.

1917—Wm. J. Mayo, Rochester—Importance of Septic Infection in the Three Great Plagues.

1918—George E. Bushnell, Washington—The Army in Relation to the Tuberculosis Problem.

1919—George W. Crile, Cleveland, Ohio—Abdominal Surgery in Civil and Military Hospitals.

1920—Henry A. Christian, Boston—Bright's Disease With Special Reference to Its Treatment.

1921—J. Whitridge Williams, Baltimore—A Critical Review of Twenty-One Years' Experience with Caesarean Section.

1922—Chas. H. Mayo, Rochester, Minn.—The Thyroid and Its Diseases.

1923—Jas. S. McLester, Birmingham—Nutrition in Its Newer Aspects.

1924—James S. Stone, Boston—Abdominal Diagnoses in Children.

1925—H. A. Royster, Raleigh—The Surgeon's Heritage and Outlook.

1926—Stewart Roberts, Atlanta—The Heart Muscle.

1927—G. Canby Robinson, Nashville—The Mechanism of Heart Failure and Its Correction.

1928—John B. Deaver, Philadelphia—Chronic Pancreatitis.

1929—Louis B. Wilson, Rochester, Minn.—Some Suggestions for Improved Training of Medical Specialists.

1930—Walter E. Sistrunk, Dallas, Texas—The Part That Surgical Anesthesia Has Played in Medical Science.

1931—R. S. Cunningham, Nashville, Tenn.—Studies on the Pathology of Tuberculosis and Syphilis.

M. Y. DABNEY.....	Birmingham
A. L. HARLAN.....	Alexander City
S. A. GORDON.....	Marion
D. T. McCALL.....	Mobile
J. S. McLESTER.....	Birmingham

## STATE HEALTH OFFICER

J. N. BAKER.....	Montgomery
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## COMMITTEE ON MENTAL HYGIENE

W. S. LITTLEJOHN, Chairman.....	Birmingham
T. C. CAMERON.....	Faunsdale
W. M. FAULK.....	Tuscaloosa
W. D. PARTLOW.....	Tuscaloosa
G. G. WOODRUFF.....	Anniston

## COMMITTEE ON PREVENTION OF BLINDNESS

W. G. THIGPEN, Chairman.....	Montgomery
M. R. MOORMAN.....	Huntsville
J. D. PERDUE.....	Mobile
P. S. MERTINS.....	Montgomery
A. M. WALKER.....	Tuscaloosa

## COMMITTEE TO MEET DRUGGISTS

W. S. ROUNTREE, Chairman.....	Wylam
J. HEUSTIS JONES.....	Camden
N. G. JAMES.....	Hayneville
O. S. JUSTICE.....	Central
M. O. GRACE.....	Ozark

## COMMITTEE ON MATERNAL WELFARE

J. R. GARBER, Chairman.....	Birmingham
J. M. WELDON.....	Mobile
C. G. LASLIE.....	Montgomery
JERRE WATSON.....	Anniston
W. M. McKISSACK.....	Huntsville
W. D. STICKLEY.....	Fairfield
J. L. SEIBOLD.....	Birmingham
S. U. NEWFIELD.....	Birmingham
W. W. BURNS.....	Selma
MAXWELL MOODY.....	Tuscaloosa

## MILITARY COMMITTEE

J. M. MASON, Chairman.....	Birmingham
CABOT LULL.....	Birmingham
ROSS C. SPEIR.....	Birmingham
W. W. HARPER.....	Selma
E. S. SLEDGE.....	Mobile

## COMMITTEE ON INFANT WELFARE

J. W. SIMPSON, Chairman.....	Birmingham
D. T. McCALL.....	Mobile
HILTON RICE.....	Montgomery
W. M. SALTER.....	Anniston
C. A. GROTE.....	Huntsville
A. H. GRAHAM.....	Opelika

## COMMITTEE ON FIRST AID

J. D. HEACOCK, Chairman.....	Birmingham
B. F. THOMAS.....	Auburn
T. J. BROTHERS.....	Anniston
R. E. HALE.....	Bellamy
W. H. BROTHERS.....	Anniston

## OFFICERS OF THE ASSOCIATION

## PRESIDENT

TOULMIN GAINES.....	Mobile
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## VICE-PRESIDENTS

G. F. LITTLEPAGE.....	Sheffield
K. A. MAYER.....	Lower Peach Tree
W. M. SALTER.....	Anniston
G. W. WILLIAMSON.....	Hartford

## SECRETARY

DOUGLAS L. CANNON.....	Montgomery
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## TREASURER

J. U. RAY.....	Woodstock
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## THE STATE BOARD OF CENSORS

W. D. PARTLOW, Chairman.....	Tuscaloosa
J. M. WATKINS.....	Troy
W. W. HARPER.....	Selma
F. W. WILKERSON.....	Montgomery
R. S. HILL.....	Montgomery

## THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

### THE STATE BOARD OF CENSORS

J. N. Baker

Life Counsellor of the Medical Association of the State of Alabama

In the last issue of *The Journal*, the writer took occasion to point out some of the reasons for the creation and continuance of the College of Counsellors and referred to this body as "one of the towers of strength" within the organization. Another such "tower of strength" is to be had in The State Board of Censors. In simple truth, for the major purposes for which this organization was originally designed, these two bodies constitute its bone and sinew. The basic thought in the mind of Cochran was to devise a scheme whereby might be utilized the talent, training and attainments of a specialized group for the promotion of the health and welfare of the people of his State. Such a group was already at hand in the medical profession, and around this he proceeded to construct the legal machinery for public health work and for medical licensure. This idea, at once bold and radical, required several years of serious consideration and much debating by the members of the medical profession before its final adoption in 1873. The scheme seems so simple and so logical, the marvel is that other states, in the earlier and more formative period of public health development, did not attempt a similar plan. To-day one can readily see that legislatures, with their pronounced political bias, would scarcely be willing to delegate such plenary power to any group; yet, in Alabama, the medical profession has met and discharged this important obligation with such signal success that little or no opposition has ever arisen. On the contrary, the confidence expressed by both the people and the legislature is so absolute that there now seems to be no evident desire to experiment with a different plan.

In past years, and before the practical application of our system to the solution of modern public health problems had been unquestionably proven, a certain amount of

doubt and dissatisfaction arose within our own ranks. Such misgivings were openly expressed in our annual meeting of 1915, when a radically different plan was proposed, debated and rejected. The experiences of the past fifteen years have now so abundantly dispelled this doubt that it no longer remains a disquieting factor.

As outlined in the previous article dealing with the College of Counsellors, *the first line of defense* within our organization rests in this body; *the second line of defense* rests in the State Board of Censors, a standing committee composed of ten picked, seasoned men, whose duty it is to bear the brunt of the Association's burden and to function for it in a triplicate capacity, viz:

- (a) As a Board of Censors,
- (b) As a Board of Medical Examiners,
- (c) As a State Committee of Public Health.

When serving in the capacity first enumerated above, namely, as a State Board of Censors, this body receives, analyzes and digests all matters pertaining to the general interests and welfare of the Association, such as resolutions, motions and constitutional amendments; the messages and recommendations of the various officers; all questions of ethics involving either the Association or an individual member, as well as all appeal cases brought to the parent body from affiliated county societies. It is thus readily seen that the jurisdiction exercised by the Board sitting in this capacity is limited to the conduct of its own membership and extends no further. Such limitation is that characterizing the standing, all recommendations from this body cal organizations. This in itself is a service of no mean responsibility and surely calls for qualifications equal to those required of one holding a Counsellorship; and yet these are the least of the obligations resting upon this Board. When thus acting, all recommendations from this body are submitted to the Association for final review, confirmation, revision or rejection.



When serving in the second manner enumerated above, viz—as a State Board of Medical Examiners or of Medical Licensure, we see the scope of authority enjoyed by this Board enormously expanded and *functioning in one of its important legal aspects*. It is somewhat difficult for the average lay mind to fully grasp the value of protection given to the people at large by having but one orthodox yardstick with which to measure any one who attempts to treat diseases of human beings, regardless of methods employed. It should certainly prove an added assurance to know that anyone displaying a certificate of qualification to practice any method of healing had been sufficiently tested by a competent board so as to make him at least not an unsafe person to whom to entrust human life. The attitude of the recent legislature in regard to a proposed bill seeking to set up a separate examining board of chiropractors showed a keen appreciation of this service and an unwillingness to change or weaken our present high standards. This Board, as well as the entire Association, has always zealously guarded this phase of our work; and it is because of this eternal vigilance that no compromising yields have been made to the various groups, whose scientific training

is usually quite meagre or nil. For service of this type, one sees at a glance that the timber selected must be, not only seasoned, but steeped in the scientific vat of modern medicine. All decisions reached by the Board as a Board of Medical Examiners are final and not subject to review by the Association.

The third and last manner in which this Board functions, viz: as a State Committee of Public Health, is, at once, the most far-reaching and the most important. The Association has delegated to this body large latitude and authority in the shaping of all public health policies, and, during the interim between its annual meetings, has empowered this Board to act in all important matters of health. The services of this Board are, at all times, at the disposal of the State Health Officer, should occasion arise when, in his opinion, such service is needed.

Such, in quite meagre outline, are the three principal ways in which this important Board serves this Association. It takes breadth of vision; familiarity with our organization, its policies and traditions; loyalty and a willingness to sacrifice in time and money, to make a useful member of the State Board of Censors.

## DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF ADMINISTRATION

J. N. Baker, M. D.  
State Health Officer in Charge

### THE PROGRAM OF A COUNTY HEALTH DEPARTMENT

A very well defined program of activities is followed in an effort to obtain maximum benefit at minimum cost. Embraced in this program are the following major activities:

1. The control of the soil pollution diseases—typhoid fever, dysentery and hookworm. The campaign against these robbers of Alabama's coffers embraces the installation of proper sanitary conveniences, the protection of water supplies, and the use of such prophylactic agents as are available.

2. The control of the acute communicable diseases—smallpox, scarlet fever,

measles, mumps, whooping cough, and diphtheria—by urging vaccination and inoculation, and by isolation: the control of malaria by screening, draining of mosquito breeding places, and oiling where drainage or like procedures are impossible; and lastly, the suppression of the social diseases.

3. Second in importance only to the control of the soil pollution diseases is the measure of protection offered mothers in the hygiene of maternity and infancy through the ministrations of kind and sympathetic nurses; the regular and systematic examination of school children; and the inculcation of proper health habits.

4. That these major activities may yield the results one has just right to expect, a program of education and publicity is conducted that the benefits of health protection may be known to all.

Certain minor activities make their contribution to a well-rounded program: The inspection of food-handling establishments, the investigation of nuisances, of stillbirths and maternal deaths attended by midwives; the supervision of the reporting of communicable diseases, of the recording of all births and deaths, and the work of midwives.

From such a program designed to include all who may seek its benefits, these immediate ends are sought:

1. One hundred per cent safe disposal of excreta.
2. One hundred per cent public intelligence of the health program.
3. Equality of opportunity for health as well as education for every child of school age.
4. Prompt reporting and control of communicable disease.
5. Complete and accurate registration of births and deaths.

The final results expected are:

1. A higher level of health and efficiency.
2. Lowered death rates.
3. Lowered incidence of preventable disease.
4. The saving of millions of dollars due to the saving of health.
5. Increased production of wealth due to increased health.

The above plan has been devised primarily for county health officers in order that they may so arrange for the carrying out of the details of their work as to give the most satisfactory results for the expenditure of funds and time available. Elaborating upon these activities it should be emphasized that "one of the primary duties of the local health department is to educate the people as to the cause and prevention of the spread of communicable diseases, and as to the possibilities for community health improvement." To that end the health officer is advised to make use of suitable health talks supplemented by motion pictures; to furnish to newspapers timely articles on public health; to distribute literature; to hold exhibits at fairs and schools; and to make personal conferences available upon request.

## BUREAU OF LABORATORIES

L. C. Havens, M. D., Director

### THE SIGNIFICANCE OF NORMAL ANTIBODIES IN RELATION TO DIAGNOSTIC AGGLUTINATION TESTS

It is now generally accepted that the explanation of the increased immunity to diphtheria in older children and adults is due to a process of natural vaccination, due to exposure to subclinical doses of the diphtheria bacillus. Frost<sup>1</sup>, for example, in studies of the epidemiology of diphtheria in Baltimore, found that the ratio of carriers to cases was 47:1 and he estimates, on this basis, that in ten years 95% of the population would have had contact with the diphtheria bacillus, while a considerable proportion would have had repeated infections. Morales and Costa<sup>2</sup> have actually observed the development of immunity as a result of the carrier condition. Neill and his associates<sup>3</sup> at Vanderbilt found that some 25% of adults have agglutinins against the diphtheria bacillus and concluded that "it is difficult to believe that adult people would develop 'normal' agglutinins except as a result of stimulation with bacteria possessing the different required antigens."

One would naturally expect, therefore, that the occurrence of agglutinins and other antibodies in the blood of normal persons could be used as a measure of the prevalence of an infection in a given region. Observations made in this laboratory<sup>4</sup> indicate that this holds true for typhoid and several other infectious diseases. Agglutination tests with the serums of 1136 supposedly normal persons were positive in 14%, in dilutions of 1:40 or higher, and in 23% in a dilution of 1:20. A history of a clinical attack of typhoid fever or of vaccination could be obtained in only 20% of these cases, indicating, as one would expect, in view of the known prevalence of the disease, that subclinical infection is common. It is further evident that the Widal test, in regions of high typhoid prevalence, must be interpreted with caution.

Healthy meningococcus carriers similarly develop agglutinins against their own

(1) Journ. Prev. Med. 1928, 2, 325.

(2) Amer. Journ. Hyg. 1931, 14, 89.

(3) Amer. Journ. Hyg. 1931, 13, 516.

(4) So. Med. Journ. 1931, 24, 652; Journ. Prev. Med. 1931, 5, 295.



strain, while those not exposed to the infection do not. Only a small percentage of normal persons in Alabama have agglutinins for *B. abortus*, thus confirming the relatively low incidence of undulant fever in the State. Dysentery agglutinins, on the other hand, occur as frequently as typhoid agglutinins. Tests with other antigens, such as paratyphoid A, enteritidis and supestifer, which are known to be of rare occurrence, further confirm the hypothesis that antibodies develop in direct proportion to the extent, the degree, and the frequency of contact with the specific infectious agent.

These observations raise a practical question regarding the value of diagnostic agglutination tests. If a disease, such as typhoid, is known to be common, the result of a Widal test in the case of a particular individual must be interpreted accordingly. If it is positive it must be remembered that one in every four or five normal persons will give a similar result; if negative, the stage of the disease must be considered before typhoid fever is excluded. As a matter of fact, the only sure proof of the presence of a specific infection is the isolation of the organism. In typhoid fever, fortunately, we have a useful cultural method of diagnosis which is positive earlier in the disease than the Widal test. It is very gratifying to find that the medical profession in Alabama realize this, as shown by the fact that the State Laboratories now receive more specimens for cultural methods of diagnosis than specimens of blood for the Widal test.

In other diseases, such as undulant fever, which are known to be of relatively infrequent occurrence, agglutination tests have more value, since there is naturally less contact with the antigen and since we know, from actual observation, that only a small number of persons normally have agglutinins for the abortus bacillus. Whatever explanation may be given for the occurrence of these normal antibodies, whether they arise as a result of specific subclinical infection, or have some non-specific origin, the fact remains that all agglutination tests for diagnostic purposes must be interpreted in the light of the clinical evidence and with the possibility in mind that the presence of agglutinins in a particular case is the result, not of a present infection,

but of contact with the infection at some time in the past.

## BUREAU OF VITAL STATISTICS

W. T. Fales, Director  
Ethel Hawley, Acting Director

### THE TREND OF DIARRHEA AND ENTERITIS IN ALABAMA

A recent article in the Illinois Health Messenger calls attention to the fact that:

"Mortality from intestinal disturbances increased sharply in Illinois during 1930, while the general death rate fell to the lowest point on record. Fatalities charged against diarrhea and enteritis went up from 1,306 in 1929 to 1,531 in 1930, causing an increase from 17.4 to 20.0 in the rate per 100,000 population. Conditions in 1930 and those which continue to prevail in 1931, were favorable to serious dietary errors. The summer was excessively hot, which increased the difficulties in keeping perishable foods wholesome. The economic depression reduced very significantly the money available for food for many families.

"Since very similar economic and weather conditions prevail in 1931, another increase, or at least no improvement in the mortality rate from this cause, will be no surprise."

A comparison of the Alabama experience with that of Illinois is interesting. The rate for diarrhea and enteritis in children under two years of age increased from 27.4 per 100,000 population in 1929 to 31.2 in 1930 and the rate for diarrhea and enteritis in persons over two years of age increased from 8.8 to 11.2, or a total increase of 6.2 per 100,000 for all ages. This increase all occurred after July 1st, as the rate for the first six months of 1930 was less than for the first six months of 1929. This was probably due to the fact that the excessively hot dry weather did not begin to affect Alabama seriously before July.

In spite of the fact that there has been a deficiency in rainfall in Alabama for 1931, there has not been the prolonged periods of excessive heat of 1930. This is being reflected in the rate for diarrhea and enteritis in children under two years of age, which bids fair to be the lowest of the

past five years. For the first six months of 1931 it was 11.3 per 100,000 as against 26.9 for the same period of 1929, and 24.5 for 1930. For July 1931 the rate was 47.7, for July 1930 it was 54.9 and for July 1929, 61.3.

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### MARRIAGE OF THE SYPHILITIC

Contributed by  
W. E. Wilson, M. D.,  
Associate Director

In 1919 a law was passed in Alabama making it unlawful for any judge of probate to issue a marriage license to any male person who fails to present a certificate from a licensed physician setting forth that the applicant is free from venereal diseases.

This law seems fundamentally sound yet practically, it is of very little value in the control of syphilis since the usual examination for marriage license consists only of a very superficial inspection of the genitalia and does not include a blood Wassermann. The greatest efficacy of this law lies in the fact that it exerts a restraining influence on men contemplating marriage, in that a person with a gross lesion will postpone application for marriage license until the external evidence of the disease has disappeared. This disappearance may be due to the virtue of nature's healing power or to one or two injections of an arsenical; but, in either case, he is an eligible candidate for matrimony although his whole system may be fairly reeking with spirochetes. There will remain always the careless, ignorant, and indifferent type who will be wholly content with the disappearance of the outward signs of the disease and will not pursue the long course of treatment necessary for the complete cure of the disease.

There are approximately 34,000 whites and 24,000 negroes marrying each year in Alabama. Of these, probably no less than 6,000 negroes and 3,000 whites have syphilis, or a total of 9,000 persons marrying per year who are infected with syphilis. Of course, many of these marriages occur among persons where syphilis is present in both partners but in many they do not.

Therefore, there must be a vast amount of syphilis transmitted from man to wife and vice versa. There is another very important factor to be considered. Of the approximately 3,500 stillbirths which occur yearly in the the State no less than 1,500 are due to syphilis. Many of these infants are not fortunate enough to be born dead but arrive in the world carrying the burden of syphilis. Most of these succumb early while others survive for a few years. With greater vitality they may even reach adulthood but are prone to interstitial keratitis and blindness, general paralysis, epilepsy, mental retardation and other serious stigmata of the disease, there being no organ of the body that may not be ravaged by the virus of syphilis.

The law as it is now enforced is inadequate and actually serves to give to the female partner a sense of false security. It appears to the writer that this law could be very materially strengthened and the spread of syphilis limited by making it apply equally to both sexes and by requiring a recent negative blood Wassermann as a prerequisite to the issuance of a license to marry.

## BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

### THE MAN WHO TRIED TO RUN AWAY FROM MEDICINE\*

Contributed by  
Margaret Murphy  
Associate Director

The old man had arisen from his chair on the porch and was near the steps watching us very closely. As we came up the steps, he came down to meet us and exclaimed, "Well, if it ain't Dr. Wood."

Dr. Wood introduced me and he placed chairs on the porch for us to sit down. There followed a rather awkward few moments. Mr. Price would first look at me and then at Dr. Wood. He seemed to be pondering something in his mind and for fear that he might be embarrassed, I told

\*This incident, recently related by Miss Murphy, working in the field in an effort to improve the standards of midwifery service throughout the State, is so interesting and informative that she was asked to commit it to writing. One wonders how many states can boast of having a male "midwife"!—J. N. Baker, M. D., State Health Officer.



him who I was and that I had been meeting all of the midwives in his county and was glad to have the opportunity of meeting my first male midwife.

I asked him how long he had been practicing midwifery and about how many cases he had every year. He replied, "Well, let's see, I studied under Dr. Shepherd for one year and he thought he would make a doctor out of me. I decided it was too hard for me to learn to be a doctor so I ran away. It seemed I could not get away from it. I started this practice of midwifery 42 years ago. I am 77 years old now and have delivered over 700 cases without 'losing a woman'".

When asked how he managed his cases, he said, "Well, I don't have any trouble with the most of them. You know, Dr. Wood, that a woman has got to do her part. If I get hold of a contrary one, I send for a doctor."

Then I asked him if he called a doctor at any other time. He replied, "Yes, there are cases that cannot be born alone and they have refused to let me use forceps, so, after I have done all I can with my hand, quinine and black pepper tea, I have to call a doctor to put on instruments."

I then asked about making vaginal examinations. "Yes, I make vaginal examinations to find out the position of the baby and how labor is progressing. Sometimes I have to turn the baby."

His only equipment is a pair of scissors and eye drops. He depends on the people to have the rest of the supplies. He attends to the mother and baby and he does not go back any more unless they send for him.

When asked if he was called in for miscarriages he said, "Yes, I handle those cases, too. They are 'mean' but I get along all right."

I then asked about any expectant cases that he might have on his list and he gave us the names of two white women and one colored woman.

Dr. Wood sat and heard the discussion but did not instruct Mr. Price in the regulations governing the practice of midwifery. I recited some of them in order to impress on Mr. Price the things he should not do. As I did so I breathed the hope that eventually the medical profession would be the only group to function as obstetrical attendants.

## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

### IMPOUNDED WATER AND MALARIA

Long before science proved the theory of malaria transmission by mosquitoes some observant persons connected malaria with ponded water. In the absence of full knowledge many different theories as to the cause of malaria were advanced. Some concluded it was due to soured timber in ponded areas, others to the green organic growth seen in some waters, and still others to "bad air" arising from ponded areas. Oftentimes these old ideas cling so tenaciously as to seriously hamper malaria control programs among certain groups of people. One old farmer was recently told that his malaria infection came through the bite of a certain mosquito and was advised to screen his house. He stated in reply, "Well boys, *some* of my malaria may have come from mosquitoes, but anyway, I'll screen my house to keep out the flies". Education is being relied upon to dispel these old ideas about malaria.

About the year 1915, some years after the mode of malaria transmission was proven, extensive studies were begun in Alabama and elsewhere to determine what should be done to prevent the increase of malaria around newly impounded water. Heretofore some very serious epidemics of malaria had occurred in such areas. The studies, continued over a period of years, resulted in the discovery of a method of control on impounded water which would prevent the production of the malaria vector, the *Anopheles quadrimaculatus* mosquito, in the absence of which malaria cannot be transmitted. Inasmuch as a number of large impounded projects were anticipated for the immediate future the State Board of Health in 1923 incorporated the method of control in the Regulations Governing the Impounding of Waters. They were repassed February 28th, 1927, were signed by the Governor, and now have the full force and effect of law.

The principal requirement of the regulations is that the basin of the project be completely cleared prior to impounding so as to produce a clean sheet of water. Other measures of less importance are specified as stocking the waters with gambusia (top minnows), periodic removal of

aquatic growth, and the application of larvicides, as oil or Paris green.

The regulations are not retroactive, that is they do not apply to ponds impounded prior to February 28th, 1927, except where the water level of an old pond is raised. They do not apply to ponds less than 1/10 acre or to any size project where no part of the impounded area lies more than one mile from any human habitation other than that of the owner.

The distance of one mile has been proven to be the approximate effective flight range of the *Anopheles quadrimaculatus* mosquito in so far as malaria transmission is concerned.

After impounding a properly cleared pond there is usually a thin rim of growth-covered shore line along the margin which will require some control measures to prevent mosquito production. Seasonal and weekly water level fluctuation are the most effective and can often be accomplished at little cost. In other words a high winter water elevation will result in a clean shore line when water is lowered to normal in the spring. A weekly raising and lowering of the water level one foot or more during the summer will in most instances completely control a pond where there are gamusia in abundance and there is not an excess of flottage.

Where the water level of a pond cannot be so fluctuated on account of the lack of water or the use to which the pond is put, then periodic cleaning of the shore line or the application of a larvicide, as oil or Paris green, is indicated.

Some fishermen believe that the tying down of logs and brush in the deep parts of the pond will aid in fish production. Such practice is permitted provided all material is securely tied down so that none of it will protrude above an elevation one foot below low water level. On pleasure projects shade trees are permitted in the 15 foot zone beyond high water level which is normally required to be cleared. Of course, every pond should be provided with a pipe and valve in the low part of the dam so the pond could be drained if found desirable or necessary at a later date.

Since the regulations were first put into effect over one hundred ponds, totaling over 50,000 acres in area, have been impounded. Very little malaria has occurred

around these ponds where strict observance of the regulations has been obtained. As a rule impounded water owners have accepted the regulations as a wise and advisable procedure for impounding. We now have health, peace and tranquillity amongst the people living around impounded water where once disease stalked unchallenged with controversies arising to fill the court dockets.

## BUREAU OF INSPECTION

C. A. Abele, Director

### THE CONTROL OF OYSTER QUALITY AND SAFETY

In the winter of 1924-25 there occurred in the large cities of the North and East outbreaks of typhoid fever of unusually high incidence and fatality rates which were traced to polluted oysters. Since that occurrence, all oyster-producing states have been devoting more or less attention to the sanitation and hygiene of taking, opening, packing and shipping oysters; and to the control of the pollution of oyster beds.

Although preliminary and emergency measures were taken in this State during the spring of 1925 and throughout the 1925-26 season, organized work was not begun until the summer of 1926 in preparation for the season of 1926-27. This work included the adoption of regulations formulated by the National Shellfish Committee and the detailing of an inspector to this particular activity. Samples of oysters and water from all the beds in the Alabama waters were examined and the regulations concerning the construction and operation of oyster-shucking plants were explained to operators and enforced.

This control activity has been carried on every season and represents a rather important phase of the work of the Bureau of Inspection. Last season thirty-one permits or certificates were issued to operators of shucking plants or to dealers located in Bayou la Batre and along the coast to Heron Bay, in Mobile, in Fairhope, Point Clear, and in the vicinity of Bon Secour.

The oysters are taken from the natural beds or reefs in comparatively shallow water close to shore or in Grant's Pass or from areas which have been planted by the State Department of Game and Fisheries. The flood of 1929 damaged the oysters



available for the 1929-30 season by silting the beds and freshening the waters for a considerable period; and the drought during the summer of 1930 injured the 1930-31 crop, because the waters became abnormally salty and salt-water enemies of the oyster preyed upon them. Prospects now indicate a good 1931-32 season, as regards the condition of the oyster crop, and a number of new shucking plants are being built, both on the Mobile and Baldwin County coasts.

The regulations prescribe that oysters may be taken only from beds freed from pollution of which has been established by the State Health Department. Only one natural reef and one private bed, both subject to pollution from the waters of Bayou la Batre, have thus far been condemned and neither of these sources is now commercially workable.

It formerly was a rather general practice to "float" oysters in the partly fresh waters of the coastal bayous over night before opening them. Even though removed from their beds, oysters "feed" at regular tidal intervals until they die. If placed in fresh water they "bloat" after feeding, thereby attaining the appearance of being larger than they actually are. But they also "bleed" more readily after opening and packing. This causes the oyster meats to shrink and sink, giving the opened can the appearance that water was added to a slack-filled can of oysters. The most serious consequences of "floating" oysters before opening them, however, is the possibility that they will become infected from the water which they "drink". Most of the coastal bayous are polluted to a greater or less extent. Freshets wash into them the sewage from considerable areas. On some of them the construction of over-board toilets is the general practice at all residences and wharves along their banks. Therefore, in order to prevent excessive "bleeding" after packing and to protect them against pollution, the "floating" of oysters in fresh or brackish waters is now prohibited and the "floating racks", so prominent a feature at nearly all the shucking plants in the spring of 1925, have all been removed.

The oyster-shucking houses must be of substantial construction, must have a separate, screened, oyster-handling room in which they are washed, counted or meas-

ured, and packed, and must be provided with an ample supply of water and a sanitary means of sewage disposal.

The oysters must be kept in bins off the floor, so the possibility of contamination is minimized. The plant must be washed down after the close of each day's activities, and all utensils and shucking buckets must be sterilized with steam or by immersion in boiling water. For the latter purpose most of the plants are equipped with vats of sufficient size and depth to hold all the buckets, etc.

When regulations have been fully complied with, a shellfish certificate is issued to the plant operator and the number of this certificate must be embossed or stamped with indelible ink on every can of oysters he packs or on every sack or barrel of shell stock oysters he ships. The complete list of Alabama certificate holders is furnished the U. S. Public Health Service and is published so that oyster dealers and health officials throughout the country may know from whom oysters may be purchased with comparative safety.

A considerable proportion of the oysters sold in Alabama is imported from Maryland, Florida, and Mississippi. In every case the certificate number of the packer should appear on the can and on the tag on the crate. If the shipment is not identified, it is an indication that it is an outlaw product from an unapproved source. Should there be any question concerning the current authenticity of any certificate number which does not appear on cans or crates, an inquiry addressed to the State Health Department will receive prompt attention.

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## County Society News

*(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)*

### BALDWIN COUNTY

J. Chason, Secretary

At the regular meeting of the Baldwin County Medical Society held at Bay Minette, September 3, Dr. H. J. Sims of Daphne presented a paper on Acute Colitis, and Dr. J. F. Bryars of Bay Minette, a paper on Anterior Poliomyelitis. The scientific program was preceded by a luncheon at-

tended by members of the Baldwin unit of the Woman's Auxiliary of the Association and by the dentists of the county. During the luncheon hour Dr. C. B. Webster, of the dental staff of the State Department of Health, spoke on Defective Teeth Among School Children. Members of the dental profession present pledged their assistance to the County Health Department in bringing to a successful consummation the goal of 100 per cent correction of defective teeth.

The society has appointed a committee to consider fee schedules and the practice of irregulars. The committee is to render a report in the immediate future.

Dr. P. M. Hodgson, Stockton; Dr. H. W. Jordan, Robertsedale; Dr. F. L. Abernethy, Foley; and Dr. C. G. Godard, Fairhope, have been nominated by the society for co-operative clinicians in venereal disease control. The County Health Officer, Dr. Chason, was authorized to take the necessary steps looking to the appointment of a clinician at Bay Minette.

#### BULLOCK COUNTY

J. K. Haygood, Secretary

At a meeting of the Bullock County Medical Society on August 26 at Union Springs, the following program was rendered:

1. Clinical Case—Dr. T. Brannon Hubbard, Montgomery;
2. Diagnosis and Treatment of Heart Failure—Dr. W. S. Hannah, Montgomery;
3. Summer Diarrheas in Infants and Young Children—Dr. W. H. McCaslin, Union Springs;
4. Hyperinsulinism—Dr. Seale Harris, Birmingham.

Dr. J. Harold Watkins of Montgomery and other visiting physicians participated in the discussion of the case and papers.

A barbecue followed the scientific program presided over by the President, Dr. C. M. Franklin.

#### CHILTON COUNTY

T. J. Marcus, Secretary

The Chilton County Medical Society was host to the Southeastern Division of the Association on October 6 at Clanton. Dr. W. W. Harper, Selma; Drs. Fred Wilkerson, J. Harold Watkins and J. N. Baker, Montgomery; and Drs. M. Y. Dabney of Birmingham and J. B. Woodall of New Brockton contributed to the scientific program.

#### COLBERT COUNTY

John P. Long, Secretary

The Colbert County Medical Society met at 8 o'clock on the evening of September 1 at Leighton and adjourned after a business meeting for a watermelon cutting at the home of Dr. R. C. Evans. The hosts of the occasion were Dr. Evans, Dr. R. D. Wright and Dr. J. H. Masterson. The following dentists were guests of the occasion; Dr. Holt of Leighton and Drs. Rhoades and Proctor of Sheffield.

#### CONECUH COUNTY

W. F. Betts, Secretary

The chest clinic of the Department of Health spent the week of September 7 in Evergreen. Dr. P. W. Auston and Misses Mary Pugh and Ernestine Watson were in charge. Sixty-five patients were examined and of these a number were x-rayed. An active part was taken by the physicians of the county in securing patients for the clinic. Many obscure cases of tuberculosis were diagnosed and the clinic was of great benefit to the members of the society as well as to the patients. The return of the clinicians will be welcomed by the physicians and the public.

#### CULLMAN COUNTY

R. B. Dodson, Secretary

The Cullman County Medical Society staged a barbecue on September 17 at which a number of visiting physicians were in attendance. Included were Drs. Adrian Taylor, H. L. Cheves, H. F. Martin, Earle Drennen and Hardee Johnston of Birmingham; H. D. Greer, F. L. Chenault, D. C. Walker and J. W. Hughes of Decatur; J. T. Burch, Danville, and W. H. Lovelady, Hartselle. The affair was a get-together meeting without speeches or scientific papers.

J. P. Kessler, chiropractor, was convicted in the Circuit Court, September 7, for practicing medicine without a license.

The Cullman County Board of Health met in regular session September 9 for the transaction of business. The board meets regularly every second Tuesday.

#### JACKSON COUNTY

M. H. Lynch, Secretary

Drs. Rayford Hodges, Hugh Boyd and M. H. Lynch of Scottsboro attended the



meeting of the Northeastern Division of the Association at Guntersville on September 9.

LAUDERDALE COUNTY  
W. D. Hubbard, Secretary

At a meeting of the Northwestern Division of the Association August 13 at Florence, under the Vice-Presidency of Dr. G. F. Littlepage, Sheffield, the following program was rendered:

1. Tuberculosis of the Kidney—Diagnosis and Treatment—Dr. Carl Grote, Huntsville;
2. Maternal Exhaustion—Dr. J. R. Garber, Birmingham;
3. Diagnosis and Treatment of Malignant Diseases of the Colon and Rectum—Dr. Cecil Gaston, Birmingham;
4. Traumatic Shock—Its Production and Treatment—Dr. Joe Beard, Nashville, Tennessee;
5. Gas Bacillus Infection of Wounds—Dr. Duncan Dixon, Talladega.

LEE COUNTY  
A. H. Graham, Secretary

Dr. A. H. Graham, Opelika, has been elected Secretary of the Lee County Medical Society, succeeding Dr. O. L. Chason, who has changed his place of residence to Montgomery.

MADISON COUNTY  
W. G. McCown, Secretary

The Madison County Medical Society held its regular monthly meeting in Huntsville September 8 and was well attended.

Drs. W. M. McKissack, E. V. Caldwell and W. C. Hatchett attended the meeting of the Northeastern Division of the Association held at Guntersville September 9.

Dr. James D. Holliman of New Hope has recently opened an office in Huntsville.

Dr. J. A. Kyser of Madison, who has been ill for several weeks, is very much improved.

Death has claimed recently two of Madison County's esteemed physicians, Dr. Claude Pettus and Dr. W. W. Haden.

MARION COUNTY  
M. S. White, Secretary

The Marion County Medical Society held its regular quarterly meeting at Brilliant on October 6.

The County Health Unit continues to function actively, with the assistance of the profession. It is reported that at a recent meeting of the County Board of Education it was agreed that each teacher in the public schools would be required to have a physical examination as a prerequisite to entrance upon duty.

MARSHALL COUNTY  
H. H. Awtrey, Secretary

The Marshall County Medical Society was host to the Northeastern Division of the Association at its meeting in Guntersville on September 9th. The Vice-President of the Division, Dr. W. M. Salter, Anniston, presided. The following program was rendered:

1. Address of Welcome—Dr. J. W. Bog-gess, Jr., President, Marshall County Medical Society;
2. New Causes of Fracture of the Patella—Dr. I. P. Levi, Anniston;
3. Problems Facing the Doctors of Alabama—Dr. Jerre Watson, Anniston;
4. Diagnosis and Treatment of Malignant Diseases of the Colon and Rectum—Dr. Cecil Gaston, Birmingham;
5. Treatment of Fibroid Tumors of the Uterus—With an Analysis of 318 Cases—Dr. W. C. Dixon, Nashville, Tenn.

Drs. E. H. Couch and T. E. Martin have become associated in establishing a hospital in Guntersville, the second to be established in Marshall County.

The recent diagnostic chest clinic held in the county by Dr. S. B. McPheeters and his staff found twenty per cent of the patients examined with evidence of tuberculosis. Following the clinic, a meeting of the society in the King Hotel, Albertville, was addressed by Dr. McPheeters, who discussed the diagnosis of early tuberculosis and differentiated the childhood type from the adult type. The clinic and the meeting, which was attended by a large gathering of doctors, were appreciated by the physicians of the county.

TALLAPOOSA COUNTY  
J. A. M. Nolen, Secretary

The annual joint meeting of the Elmore and Tallapoosa County Medical Societies was held at Camp Dixie on August 18 with Dr. L. H. Hamner of Camp Hill presiding. Dr. Robert Parker of Montgomery read a

paper on "So-Called Colitis". The subject of "Acidosis" was presented by Dr. W. D. Wood, Camp Hill. Dr. T. D. Rivers, Montgomery, discussed "Tuberculosis" and answered numerous questions asked concerning the subject.

The following doctors attended the meeting:

J. S. Harmon, W. M. Gamble, W. S. Owsley, Jesse Gullledge, H. T. Jones, D. D. Corrington, R. H. Coker, I. R. Nix, J. F. Sewell, O. S. Justice, E. R. Lett and R. L. Huddleston of the Elmore County Medical Society; L. H. Hamner, W. D. Wood, J. A. Chapman, S. H. Newnan, C. C. Fargason, J. A. M. Nolen, and A. L. Harlan of the Tallapoosa County Medical Society; I. D. Wood and R. D. Porch, Sylacauga; J. M. Washam and Duncan Dixon, Talladega; and G. M. Taylor, J. L. Branch, T. D. Rivers and Robert Parker, Montgomery.

#### WILCOX COUNTY

E. L. McIntosh, Secretary

Members of the Wilcox County Medical Society rendered valuable aid to the County Health Unit in clinics held during August for the removal of tonsils. Dr. J. C. O'Gwynn, of Mobile, was in charge of the first, scheduled for Camden, and was assisted by Drs. Heustis Jones, Will Moore, Ernest Bonner and Paul Jones. The second clinic was held at Pine Hill with Dr. R. J. Grayson of Selma in charge. Dr. Grayson was assisted by Drs. Robert Dixon, Walter Fudge, P. E. Godbold, F. F. Kimbrough, and K. A. Mayer; and by Dr. R. A. Irons, Thomasville. At each clinic registered nurses kept the patients under observation for twenty-four hours.

The society suffered the loss during the summer of two of its valued members: Dr. Erskine Donald died at his home in Pine Apple on July 1; Dr. T. Warburton Jones died on July 17.

## *Book Abstracts and Reviews*

### A BOOK FOR THE UROLOGIST

"Collected Papers — 1904-1929—Edwin Beer", published by Paul Hoeber, is one of the most charmingly written volumes that has come to the reviewer's attention for many months. The articles read like essays of Oliver Wendell Holmes. The reader

is impressed by the precision of the author's wording and by the clear cool logic of his reasoning.

Most of the articles deal with urological subjects, but there is a chapter on thrombocytopenic purpura and one on diseases of the spleen which will be of particular interest to the internist and surgeon. The urological chapters cover a very broad field. There is an excellent article on vesical neck contracture, a masterful description of uric acid stones and uric acid crystal showers, a series of papers dealing with the methods of treatment of vesical neoplasm, especially the use of high frequency currents and indications for radical operation. Beer describes the use of indigo carmine to determine the patency of a ureter or to help in locating an obscure ureter orifice. He brings out the startling fact that only about 25% of vesical calculi show in the X-ray. He mentions the use of the X-ray in the operating room to determine whether all stones have been removed in the course of a pyelolithotomy. He makes a plea for early diagnosis of tuberculosis of the kidney stressing the fact that the disease begins as a unilateral infection and that cure is possible if operation is performed early.

The urologist simply must possess this book. The literary physician will be thrilled by its lucid style. Any reader will see behind these papers a mind of more than usual brilliance and a scientist of no mean importance.

C. K. W.

### CULTIVATING THE CHILD'S APPETITE

Charles A. Aldrich

The Macmillan Co.

The author has taken one of the most common complaints, namely the loss of appetite, and written his candid opinion of it. This book is sufficiently scientific to be a help to the physician and yet plain enough to be of great benefit to the mother, teacher and nurse. Dr. Aldrich places strong emphasis on the mental phase of this question. Strong consideration of the environment of each individual is urged. His ideas are sound and practical and based on years of experience.

C. E. R. P.



## ON RECTAL DISEASES

Saunders has published a book by Louis S. Buie of the Mayo Clinic entitled "Proctoscopic Examination and Treatment of Hemorrhoids and Anal Pruritis". The fact that the book is published by Saunders recommends it almost as much as does the fact that the author is associated with the Mayo Clinic. The book is less than 200 pages in length but is profusely and vividly illustrated. The reviewer finds certain phases of the book that seem inadequate. The chapter on the use of the proctoscope includes no description of the appearance of lesions as seen through this instrument. In the treatment of hemorrhoids, Buie describes his personal modifications of the usual operative procedures, but their advantages do not seem convincing. He writes enthusiastically of the injection method of treating selected cases of internal hemorrhoids and describes vividly the complications that have followed the use of phenol in this method of treatment. To one unfamiliar with this form of treatment it would not be obvious that the complications are not to be anticipated when quinine and urea hydrochloride are used. He describes a method of treating anal pruritis by alcohol injection but fails to give the results of his cases so treated. Finally, the procedures recommended by him seem to require an unnecessary amount of detailed and complicated postoperative care.

C. K. W.

## *Southern Medical News*

SOUTHERN MEDICAL ASSOCIATION

Twenty-Fifth Annual Meeting

New Orleans, Louisiana, November 18-20, 1931

### THE NEW ORLEANS MEETING: "A REMEDY FOR STATIC MINDS"

(Reprinted from *Southern Medical Journal*, October 1931)

"Things in nature rarely are static; they increase or they decrease; they grow or they decay; they progress or they retrogress. Man's education in many respects resembles things of nature; rarely is it static; when knowledge does not increase, almost always it decreases. Physicians should remember this and make every effort to keep out of the static state and on the side of increase, of growth, of progress.

"Physicians can be divided into two great groups, those that are learning and those that are forgetting; those that each year know more, and those that each year know less. There seems no third group, those that are stationary.

"A few physicians increase in knowledge from within and grow from their own doing. These are the innate investigators. The rank and file require outside help to grow and to progress. Books, meetings, contacts, discussions, teachers are our armamentarium for progress. Like the 'spring tonic' of past days, all of us need some of this medicine, at least annually, better if it comes more frequently. A large majority of physicians know their need and seek treatment."—Dr. Henry A. Christian, Harvard University Medical School, "A Remedy for Static Minds", in *How to Live*.

After seven years, New Orleans, the Crescent City, is again host to the Southern Medical Association. The seven years have brought many changes. The new municipal auditorium, the most modern in the South and one of the most modern in the whole country, makes it possible for all activities to be under one roof: not only the general sessions and the sections, but the scientific and technical exhibits, and the main social function.

New Orleans has doubled her hotel facilities during the past seven years, so that all are assured of comfortable accommodations accessible to all the activities of the meeting.

New Orleans has increased her medical armamentarium. Tulane has moved into a new and modern and most complete building on Tulane Avenue next to Charity Hospital, a building complete in every respect and previously described by Dr. Bass in the *Journal*.<sup>\*</sup> The University of Louisiana will have a full four-year medical department beginning this fall with a modern and complete building within the grounds of Charity Hospital. New Orleans has improved its hospital facilities and broadened the scope and effectiveness of its public health work. The Government is now completing a new Marine Hospital.

Realizing the necessity for conserving the physicians' time, the Association approved the suggestion of the Council that the meetings in the future occupy only three days, Wednesday, Thursday, and Friday. Conforming to the action of the Association, the New Orleans meeting will occupy three days, November 18 to 20, inclusive. The Southern Medical Association meeting is a necessity, not a luxury.

<sup>\*</sup>Bass, C. C.: A New Departure in the Medical Curriculum: Presentation of Clinical Subjects at Tulane. *Sou. Med. Jour.*, Vol. xxiii, No. 10, October 1930.

# THE JOURNAL

OF

The Medical Association of The State of Alabama

AND OF

The State Board of Health

Vol. 1, No. 5

Montgomery, Alabama

November 1931

## SOME PROBLEMS OF MEDICAL ETHICS\*

OLIN WEST, M. D.  
Chicago

It gives me very peculiar pleasure to have the privilege of appearing at a meeting of the Alabama medical profession, organized as it is into the Association of the State of Alabama. It gives me peculiar pleasure, too, to be here at a time when my old friend, Dr. Harrison, is president; he is older than I am in spite of any efforts he might exert to make you believe to the contrary. I told him tonight that I had known four generations of his family. I doubted he could do very much better than that himself; but he pointed out that he has four or five grandchildren, so he has known five generations of his own family. I also pointed out to him, speaking for all the generations except the last two, that I could not note there had been any great improvement in the first three generations.

I get a great thrill too out of coming to Alabama because it is my native state. Especially does it thrill me to come to Birmingham, which was for three years my home in its "wild and wooly" days, and see the great city that has developed.

I am supposed to talk to you tonight about some problems of medical ethics. I shall undertake to tell you a little of the story of the development of medical ethics and to discuss in a very general and informal way some of the issues that are confronting the profession and, in an equally serious manner, the public.

The study of the development of medical ethics is rather engrossing to any person

who is at all interested in historical sequences. The first record that we have, insofar as I have been able to discover, of the establishment of any sort of a code of ethics for the guidance of the medical profession was the code that was laid down by one of the kings of Babylon two thousand two hundred and fifty years before Christ,—King Hammurabi. His code was really more a compilation of laws and regulations for the control of the physicians of that day, who were really not physicians but priests. In the code of Hammurabi rewards were set up, penalties were established and the fees that could be charged by the physician-priest of that day were clearly defined. A priest-surgeon who successfully performed an operation, specifically mentioned in the so-called code, was to be paid so many pieces of silver. One who failed to successfully perform an operation specifically mentioned, and a number were mentioned, was not only condemned to go without any fee but was punished, sometimes very severely, for the failure of his efforts at surgery. It is recorded that in one particular instance a priest who had failed to secure successful results was condemned to suffer the penalty of losing his fingers. Other penalties of a similar nature and even worse were set up in this code of the King of Babylon, 2,250 years before Christ, for the failures on the part of physicians of that day.

Coming down through the centuries, along about the seventh century before Christ, other attempts were made by the Egyptians to establish what we may, for want of a better descriptive term, call codes of medical ethics for the guidance of those upon whom was imposed the duty of attending to the sick and injured. It was about that time that ethics began to have

\*Address delivered at the public meeting of the Association, in annual session, Birmingham, April 22, 1931.



effect in the matters of moral responsibility of physicians. Along about 260 before Christ came the man who has come to be known as the father of modern medicine, Hippocrates, the deviser of that oath which has come to be known as the Hippocratic oath, and is generally considered to be the basis of the codes of ethics that have been developed since that time.

There were no developments of any particular significance in the advance of ethical standards from the time of Hippocrates for about two thousand years. Between the years 1775 and 1803 a British physician, Thomas Percival, a resident of Lancaster, constructed what he called a code of practice. There is some evidence to the effect that his purpose in writing this code was that he might have an instrument for the guidance of those who performed the duties of surgeons and nurses and attendants in a certain hospital. The Percival Code of Practice, later called the Code of Medical Ethics, is in reality the basis for the codes that have of late years been officially adopted by various medical organizations, including the Principles of Medical Ethics of the American Medical Association, adopted by most of our fifty-four constituent state and territorial associations.

Even before Percival wrote his code of practice, however, the Massachusetts Medical Society, in the United States, then a new nation, had some discussion of matters of medical ethics in the constitution of that society, which was organized about 1781.

The American Medical Association was organized and had its first meeting in the year 1847. In that year and the next year, 1848, a code of medical ethics was prepared and adopted by the American Medical Association as an instrument to guide the members of that body in all ethical considerations. There were independent medical societies, some of them altogether local in nature, that devised codes for their own particular purposes. Many years after the organization of the American Medical Association, the long code which was adopted at the time of its organization was rather drastically shortened and amended, and has since been known as the Principles of Medical Ethics.

Most of the old codes of ethics were really quite as much rules of etiquette as prin-

ciples of ethics. Even to this good day in our modern principles of ethics, there is still to be found somewhat of a tendency to establish rules of etiquette, though that tendency is very slight now as compared with the tendency that formerly existed.

It is a notable thing that in all codes devised by physicians to serve the purpose of the instrument which we now know as the Principles of Medical Ethics, the interest of the patient has been made paramount. In the Hippocratic oath, in the Hippocratic law, and even in the rules and laws that were laid down by King Hammurabi 2,250 years before Christ, the interest of the individual patient was the thing of first consideration, and that is true of our principles of medical ethics today. That provision in the professional code is the thing that marks the difference between a business, as commonly conducted in this day and time, and a profession.

A profession does not simply happen, nor does it grow out of the need or desire of the people for commodities or services incident to the conditions of any particular short period of time. A profession develops over a long period of time, out of a vital and continuing need of all the people, and its development is made possible only by the consecrated devotion of men actuated by the highest purposes, inspired by the highest zeal for truth and possessed by a burning spirit of service to humanity. A profession cannot exist without ideals and traditions. When ideals are destroyed and when traditions are ignored, a profession quickly degenerates into a trade with private gain as its chief aim.

The adoption and the observance of ethical rules by a profession constitutes at once the greatest and most effective safeguard of the higher interests of the public and of the profession itself. To tear down the ideals of medicine, to ignore its traditions, to disregard its principles of ethics would be to destroy scientific medicine, to deprive mankind of its benefits, and to subject the people to the rules of quackery and fraud.

There has been a tendency on the part of certain persons to decry and to belittle the ethics of the medical profession. This tendency grows out of the fact that those persons do not know what our rules of ethics

are, and, without a professional view-point, could not understand them if they did know. It is only through long professional experience that rules of professional conduct can be established or understood. There is even a tendency upon the part of a certain element in our own profession to condemn our principles of medical ethics as a most archaic document, not in keeping, they say, with the spirit of the times. I do not know what the spirit of the times is, but if it is the spirit of speculation that seems to have been rampant of late years, and the spirit of getting what you can for as little as you can at the expense of anybody, anywhere, at any time, I thank God, that the principles of medical ethics are not in keeping with the spirit of the times. It is, probably, this very element in the medical profession, that says that medical ethics are moss-covered and useless, that makes necessary the maintenance of a code in which principles are defined and in which basic rules are laid down. Without that element, perhaps the golden rule in all its beautiful simplicity would be all that is needed.

One of the so-called problems that seems to be agitating a great many minds in the medical profession and among those who are interested, for one reason and another, in medicine, has grown out of a demand on the part of a certain element of our social group that the physician shall advertise. There has been a mysterious insistence on the part of the public press within late years that the physician,—the individual physician and physicians collectively—should resort to the use of printer's ink and advertise. I have never been able to understand this insistence on the part of the editorial writers of some of our great newspapers. I have noted that those writers who seem to be all excited about this matter and who demand loudest that physicians should advertise do not themselves advertise. I daresay there are not ten people in this audience, and I believe that this audience is as intelligent as any that could be gotten together anywhere on this globe, that could name ten of the really great editorial writers on newspapers in the United States. Why do they not advertise? They do not advertise because it is against their ethical principles to do so.

They have no bricks to sell that may be better than those that are made in another man's brickyard; they have no sugar to sell that perhaps may be a little sweeter than the sugar that is sold by some other man; they have nothing to sell except the product of their brains, and they sell that in a very modest sort of way, without self-praise, and you do not even know their names. But somehow they have lately become extremely insistent that the physician should advertise.

Well, the physician does not advertise for the same reason that the big newspaper editorial writer does not advertise. He knows that if he were to advertise, and physicians know that if they were to advertise, it would only be a question of time until the biggest quacks and the most brazen frauds would make them all ridiculous in the game of advertising. And who would be the sufferer? The public. That is the kind of principle that is established in the principles of medical ethics.

There has also been an insistence that seems to have grown louder and louder as the months have passed by that the organized profession, the county medical societies and the state medical societies, shall advertise. The insistence in some places has been of a little different nature than that which has called upon the individual physician to advertise himself and has been to the effect that the county medical society, should buy advertising space in the public press and elsewhere to give the public information about the causation and the prevention of disease and about the methods of practice that have been developed by the medical profession in dealing with disease, both in its prevention and in its cure. That has been another insistence I have found it hard to understand. It has always been my understanding that the press boasted that it was its duty and its privilege to give to the public helpful information in every field of life and in every field of social activity. I have found it hard to understand why the medical profession should be called on in its organized capacity to bear the burden of expense incurred in presenting helpful information to the public through paid advertising.

The medical profession has a tremendous responsibility, that naturally devolves



upon it, to provide for the people such information as can be made helpful to them, —information that can be digested, assimilated and turned to useful purposes by the public concerning the nature of disease, the prevention of disease, concerning even some methods that are employed in the treatment of disease. That is the responsibility that rests upon the medical profession, to provide the information for use by any worthy agency that should pass it on to the public.

Many of the ethical questions that are coming into particular notice lately have to do with hospitals. The development of the hospital as an institution of service to the community has been one of the most remarkable developments in the history of mankind, and one of the most rapid. It is not at all surprising that important questions of ethics are arising from day to day from the conditions that have been created with the progress of hospital development. Other questions that are coming up for constant attention have to do with the establishment of groups of physicians in the practice of medicine and with the practice of medicine by lay corporations. A great deal might be said about these matters but time does not permit us to enter into their discussion.

It has been my observation, and I suppose I have had a somewhat unusual opportunity for observation, that most of the problems that come before our professional judicial bodies and that are commonly called ethical problems, might quite as well, and perhaps even better, be called unethical problems. Many of them are really not problems at all, but are more in the nature of controversies based on personal peculiarities, in some instances on personal animosities, and many times on circumstances arising out of conditions over which the medical profession has little or no control. The public press has played a very considerable part in the creation of many of these so-called problems even when its motives have been good.

There are, however, certain questions of important interests to the profession and to the public, real problems in medical ethics, that are coming with increasing frequency for consideration by our judicial bodies. Most of these have grown out of

conditions attributable to modern practices in government, in industry and commerce, and in the various fields with which modern philanthropy is concerning itself. In some instances there are no specific precedents for guidance in dealing with these matters, but they must be dealt with on the basis of fundamental ethical principles, and in the light of the results of the age-old experience of the medical profession in applying its hard-earned knowledge of scientific medicine for the benefit of all the people.

Where a profession whose service is indispensable is involved, the principles of professional ethics cannot be left out of the picture even though the problems whose solutions are sought are primarily problems of economics or problems in other fields. There is no vital interest of the medical profession that is not also the interest of the public, though the public does not seem to know that this is true. Just as the individual physician who truly represents the spirit of medicine always holds the welfare of his patients paramount, so the real medical profession gives first consideration to the general public good. Its decisions, however, though they be absolutely correct, do not always find favor with the public for the reason that the public does not know medical science and knows very little about the many factors that are involved in the delivering of effective medical service. The medical profession makes no claim of infallibility, but it does believe that it has some knowledge of the fundamental principles of psychology and of common sense. It is not at all certain that had physicians been at the helm during the last two or three years that so much reckless disregard for fundamental principles of economics would have been displayed. What has this to do with medical ethics? Well, if a paternalistic government is to destroy individualism and overthrow the principles on which this government is established and under which it has grown to be the superior nation of the globe, and to promote the spirit of getting something for nothing; if industry and commerce are to ignore basic rules of economics and create recurring periods of depression and distress; and if philanthropy is to pursue policies that tend to make for dependency rather than independence; and if all these

agencies are to combine in the adoption of plans to control the practice of medicine, then surely the questions of medical ethics will be present on every hand for solution and will have to be solved in order to save scientific medicine from destruction.

Paternalism in government will never provide the people with efficient medical service. The mass production methods of industry and the high pressure salesmanship of commerce can never be successfully applied in the practice of medicine and in the delivery of adequate scientific service for the benefit of the public. Philanthropy cannot control professional activities and furnish service to the large masses of the population without weakening the essential fibre of the people and without destroying individual and community efficiency and independence. As long as human beings are what they are, in the medical profession and in society, they must have medical service, and just so long will the art of medicine have to be practiced along with its science. Whatever scheme, whether fostered by government, by industry or by philanthropy, that tends to destroy that peculiarly essential individual relation between the physician and his patient, through which the physician is enabled by his art to best apply his knowledge based on established scientific facts or on the result of professional experience, will inevitably work harm to the public as well as to the profession.

If every physician in the country were as well qualified as the best and would provide the best service of which he would be capable under such circumstances in every case, there would be few problems of a medical nature to be solved. The greatest responsibility, as I see it, that rests upon the organized medical profession in discharging its duty to the public is to see to it that everything that can be done shall be done to make its every member a better physician. In my humble opinion, the organized medical profession in the United States has well discharged that responsibility up to the present time. It has not accomplished all that it would like to accomplish, but it has never quit on the job, and it is striving today in Alabama and in every other state in the United States to do the very thing that I have indicated,—to improve the conditions of medical educa-

tion, to extend and enhance medical knowledge and to apply it for the benefit of mankind. But that consummation will not be achieved by simply adding to the store of scientific knowledge in the possession of the members of the medical profession, but only along with that, as the ideals of medicine are upheld, its traditions are observed, and the principles of medical ethics are adhered to and enforced.

In closing I wish to read a paragraph which has recently come under my eye, written by my friend and associate, the editor of the *Journal of the American Medical Association*, in discussing some of these very matters that I have tried to talk to you about tonight.

"The public must be educated more and more to the fact that the ideals and morals and principles which have guided the medical profession since the beginning of time still obtain. From these there can be no retreat; there can be no retreat from the idea that the interest of the public is first."

My friends, that is the fundamental idea in every code of medical ethics that has ever been devised.

There can be no retreat from the idea that there must be a minimum standard of education for all who expect to heal the sick. The profession in its organized capacity, has spent years of effort and hundreds of thousands of dollars trying to improve the standards of medical practice and of medical education without selfish purpose, but with a desire to extend in the most helpful manner possible the benefits of scientific medicine to mankind everywhere, even to the furthestmost corners of the earth.

There can be no retreat from the idea that the physician must be a man of high moral character, trusted to come into a home without debauching it, trusted to come into a home with the idea that the rights of that home and that family are safe. That is one of the simplest and yet one of the biggest provisions of the principles of medical ethics, designed primarily for the public benefit and for the public protection. There can be a departure from some of the old conceptions as to who goes first to a consultation, who has the right to be mentioned in a newspaper, who has the right to make a public lecture on health, but there can be no retreat by the medical



profession from the fundamental principles of medical ethics without which there can be no medical profession, and without which, along with the maintenance of professional ideals and reverence for professional tradition, scientific medicine would be destroyed, and its benefits denied the people of the earth.

## TULAREMIA OF THE EYE\*

### REPORT OF CASE

THOS. F. HUEY, M. D.,  
Anniston

The ocular form of tularemia is a comparatively rare disease, only thirty-five cases having been reported in the literature up to the present time. Three of these thirty-five cases proved fatal.

D. T. Vail, Jr., in describing the history of the disease, tells us that in 1908 Wm. B. Wherry, a bacteriologist, was assigned to the Port of San Francisco to investigate plague among ground-squirrels.

In 1911 McCoy and Chapin, working on this plague-like disease in the ground-squirrel, identified an organism, almost through chance, which they named *Bacillus tularensis* after the County of Tulare in California, in which the disease was first observed. In attempting to isolate this organism, they used every possible culture medium which they knew. They had on hand culture tubes containing egg yolk medium. As a last resort they inoculated these with infected material and found that the organism (*B. tularensis*) would grow.

They also discovered that rodents were highly susceptible to inoculation with the organism, producing the same type of disease which they had observed among ground-squirrels. At that time they prophesied as follows: "We do not know whether the organism causing this disease is pathogenic for man, but judging from the large number of species that are susceptible we are inclined to suspect that man might contract the infection."

In 1912 they worked out an agglutination test which has been extremely useful in proving the presence of the disease. Wherry dropped an emulsion from a culture into the healthy eye of a guinea-pig and reproduced the conjunctival disease,

with death of the guinea-pig in four days. This is an important observation since it indicates that the conjunctiva does not need to be traumatized for the organism to penetrate.

Judd tells us that tularemia is only secondarily a human disease, being primarily a fatal bacteremia of wild rodents. It is transmitted to man by the bite of an intermediate host, by the bite of contaminated animals or by self-inoculation. The intermediate host includes horse-flies, wood-ticks, bedbugs and fleas. In most of the cases in man, the disease is contracted through self-inoculation or contamination of the hands or conjunctival sac with parts of the internal organs or body fluids of the infected animal. Therefore, it is found chiefly in those handling the animals, such as farmers, market men, cooks, hunters and laboratory workers. There is no record of the transmission of the disease directly from man to man.

The inoculation period varies from one to ten days, the average being three and one-half days. The onset is sudden and usually consists of headache, nausea, chills and fever. There is enlargement and tenderness of the pre-auricular, submaxillary and cervical lymph glands. The disease runs a course of several weeks. During the first week there is bacteremia. Convalescence is slow and there is great weakness on exertion.

The diagnosis is made by the agglutination of *Bacterium tularensis* by the patient's blood serum. The reaction is absent during the first week but appears during the second.

There is no specific treatment; perhaps the best local treatment is continuous hot applications of magnesium sulphate solution, and the frequent lavage of the conjunctival sac with a mild antiseptic solution, such as boric acid. A 1% solution of atropine sulphate is to be used if iritis or a corneal ulcer develops. The general treatment should be supportive. If the glands suppurate, they should be incised. I noticed one peculiar thing in regard to the suppurating glands, viz; there seemed to be no tendency to pointing.

### Report of Case

On Nov. 29, 1930, a farmer, age forty years, came to see me regarding what he

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described as an injury to his left eye. He stated that on Nov. 22 he was struck in the left eye by a piece of wood that he was chopping. The following day there was a great deal of swelling of the left eyelids and much pain. When he came to my office at first glance it looked like a case of orbital cellulitis. The left eyelids were immensely swollen and inflamed. A lid elevator had to be used to get a look at the eye. There was a great deal of chemosis of the conjunctiva, and on the bulbar conjunctiva there were numerous round ulcers about two millimeters in diameter filled with necrotic material. There were numerous ulcerated areas in the palpebral conjunctiva. The pre-auricular and submaxillary lymphatic glands were enlarged and painful, later going on to suppuration and requiring incision. The deep cervical lymph glands were enlarged but did not suppurate. An ulcer of the cornea below the pupil developed after about two weeks. This ulcer was very slow in healing, leaving a moderate scar.

This being a case of unusual severity, I tried by numerous cultures and smears to determine the causative organism, but the report on every one was negative, except for staphylococci, streptococci or pneumococci.

About the time the man was beginning to get well, the thought came to me that it might be tularemia. Acting on this supposition, I had the patient go to the City Laboratory to have the agglutination test for tularemia made. The laboratory technician reported the test decidedly positive.

I then asked the patient if he had handled a rabbit about the time of his injury and he said that about two days before his injury he had dressed one that his dog had caught. No doubt he had infected his eye at that time and the injury to his eye, coming two days later, was only a coincident but helped to obscure the real cause of his trouble.

This patient made a good recovery after a prolonged convalescence.

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#### CONSTIPATION IN CHILDHOOD\*

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Constipation is the most common complaint heard by the practitioner of medicine. It is a condition simple in itself but complex and far-reaching in effects. To deal with constipation in early life is to deal with the lifelong health of the individual.

The ancient Greeks knew many things about this condition that are not generally appreciated by the medical profession of today. Hippocrates revealed the ideas of his time by saying, "the excrement is best which is soft and consistent if passed at the hour which is customary, and in quantity proportionate to the food eaten; for when the passages are such the lower belly is in a healthy state".

The most thriving business of the present day is that of the "patent medicine man". What is he selling? Laxatives, cathartics, and purgatives. He is wise. He is ascribing to this extremely common malady, constipation, names of much more dangerous illnesses. He thereby commercializes his knowledge that, by relieving constipation, a cure at least temporary, is effected.

The medical profession regards constipation as of far less importance than diarrhea. This is true as pertains to mortality but not to morbidity. This brings to mind the words of a distinguished pediatricist as told a mother who complained because of constipation in her child. The mother was advised to offer a prayer to God Almighty each night and give thanks to Him that her child had constipation rather than diarrhea. This, gentlemen, is the way most medical men feel at the moment, but not after they look back and see the effects resulting from prolonged constipation.

Pediatricists see constipation in its incipency and should heed the mother's plea for a cure. Constipation is undoubtedly the

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cause of the majority of all ills. It is not the condition itself that warrants minute study; however, the various manifestations of metabolic disorders resulting from constipation, in later life, demand attention. These late manifestations are usually seen by the general practitioner, internist and surgeon. The origin of these up-sets is seen in childhood and should be treated in its incipency.

Medical men in general hear the mother's story of loss of appetite and weight, sallow skin, malaise, foul breath, coated tongue and restlessness in the boy or girl. These are early signs of constipation. When a mother complains because of these, let your first thought be constipation. The time for treatment of constipation is before the child is constipated. How can a child have a good appetite if the lower bowel is not clean? The food cannot pass from the stomach in the proper time if the colon is already jammed and sluggish. The child grows up as a nervous, irritable individual with no appetite because of an abnormal retention of waste materials in the lower bowel.

Numerous causes of constipation could be considered but the two most frequent are diet and habit. The first, diet, is best included under treatment. The second cause, habit, is one of the most serious we have to combat in childhood. Psychologists believe this has more to do with constipation than any organic or functional cause. Wile says, "in a great majority of cases there is an underlying neurosis which frequently escapes the attention of the physician and, in these, I have reason to believe that until the emotional life of the patient and his ability to live above his fears are corrected little hope of complete relief can be seen".

Before any ideas of treatment are introduced the effects and results of the treatment used in the past should be discussed. The type of treatment used by the medical profession at large is little or no better than that used by the patent medicine man or the layman. These words may be offending but strong criticism is warranted where there is routine use of cathartics, suppositories, and enemas. Such routine should be discouraged because of the habit produced and because of the serious and permanent injury sometimes done the anal canal. It

is very common to see an atonic sigmoid due to repeated ballooning of this part of the gut. Constant use of enemas is a form of anal masturbation and may lead to serious forms of neurosis.

A long and general view of constipation in childhood is the only one which leads to success. To concentrate on constipation to the exclusion of the general condition of the child is to invite failure. When treating constipation the whole child and his environment must be considered. The child's entire life must be modified. The day must be shortened, the rest lengthened, and nervous energy conserved. The treatment of constipation should be self-evident if the causes are corrected, but is this true? The greatest obstacle in treatment is the mother. The treatment must be instilled into her mind. When this is accomplished the treatment will be successful and the patient cured.

The diet of the average child is neither regular nor normal. The carbohydrate content is far too great. In considering diet four suggestions may be offered: (1) Eat a sufficient quantity of fresh food. Foods that are cooked too long or preserved for a long period of time lose their potency. (2) Chew all food well. If this is not done, excessive work is forced upon the stomach. As a result there remain gastric stasis and up-sets. (3) Eat only three times a day. (4) Drink a large amount of water. Water before breakfast is very important. Concentrated foods do not pass through the intestinal canal within the normal time neither do they allow normal flow of gastric, pancreatic and intestinal juices.

In considering habit three suggestions may be offered: (1) Form regular habits. The child should be trained to go to the stool at the same time every morning. It is essential that a time be taken which is ordinarily not interfered with. The natural time for evacuation, according to the majority, is immediately after breakfast. (2) Take sufficient exercise. (3) Never neglect nature's call. If no response is made to the initial stimulus the desire to defecate soon passes away. Continued neglect causes abnormal dilatation of the rectum and this is followed by loss of tone and function.

Constipation is a selection on the part of the child. He wants to play. His mother

wants him to have a bowel movement. Both desires need to be realized but instead of either he selects constipation. The mother focuses too much attention on this point. He is normal and conscientious but had rather be constipated than have the same argument every day.

In closing let me repeat the seven outstanding points suggested:

- (1) Eat a sufficient quantity of fresh food.
- (2) Chew the food well.
- (3) Eat only three times a day.
- (4) Drink a large amount of water.
- (5) Form regular habits.
- (6) Take sufficient exercise.
- (7) Never neglect nature's call.

Gentlemen, if you will give this condition the consideration and treatment it deserves you will practice more valuable preventive medicine and will alleviate more suffering than ever before.

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#### DISCUSSION

*Dr. W. M. Salter, Anniston*—In this splendid, practical paper Dr. Parker has brought before this Association a medical problem which deserves our most careful consideration, a problem the doctor has to face every day.

Constipation is a great menace. If we have built a healthy body during childhood, we have built a healthy adult, I believe. The majority of cases of constipation are brought about by the administration of drastic purgatives during the first two years of a child's life. The indiscriminate use of castor oil has been responsible for an untold number of cases of obstinate constipation. You have heard this from mothers: "I have given castor oil every day for a week and my baby is no better. What must I do? The baby is passing cold every day."

As a matter of fact, the baby is not passing cold through the intestinal tract. What she sees is mucus from the irritation caused by castor oil. She has been impatient. When the bowels did not move she felt that she should repeat the purgative. I heartily agree with Dr. Parker in his statement that the indiscriminate use of purgatives should be discouraged.

In considering diet and habit, the essayist brought out seven points. To my mind, eating a sufficient amount of fresh food, forming regular habits and answering nature's call are the most important.

I have enjoyed this timely paper.

*Dr. Parker (closing)*—In closing I want to thank Dr. Salter for his discussion and to impress upon your minds the importance of the mother in every case. Any success you hope to attain must be attained through her. If you will teach her, the baby will take care of itself.

#### DEEP SEATED DIVERTICULA OF THE ESOPHAGUS\*

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Birmingham

The increasing frequency with which esophageal diverticula have been reported in recent literature from widely separated locations and the demonstration of a case in my own practice are the reasons this subject is presented for your consideration.

Two types of esophageal diverticula were described in 1840 by Rokitsansky, the traction and pulsion. In 1882, Oekenomides added the mixed diverticulum designated by Brosh as the traction-pulsion type.

The pulsion diverticulum may occur at any level but is most common in the pharyngoesophageal region. The point of origin is just back of the cricoid cartilage on the posterior wall of the esophagus at its junction with the pharynx. This type is considered by Carman and Vinson to be due to weakness of the esophageal wall. Chevalier Jackson<sup>1</sup> claims that the chief factor in the etiology of this type of diverticulum is the pinch-cock action of the cricopharyngeus muscle. Normally the pinch-cock is closed except when it opens for food and water. If it fails to open, a tremendous pressure is exerted against the pharyngeal wall which causes a pouching at its weakest point. This same pinch-cock action occurs at the level of the diaphragm and is a most important factor in producing dilatation of the esophagus.

Bevan<sup>2</sup> believes that there may be a weakness in the esophageal wall caused by a congenital absence of muscle fibers over a large area.

The traction diverticulum is produced outside the esophagus usually from the cicatrix of a previously inflamed lymph gland and occurs more frequently in the thoracic portion of the esophagus. The inflammatory process draws the wall of the esophagus outward, including all coats.

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The sac may enlarge because of pressure within and in this manner a traction-pulsion diverticulum is formed. Judd<sup>3</sup> claims that this occurs in about 7% of traction diverticula. Zenker and Von Ziemessen<sup>4</sup> added caries of the spine, pleurisy, chalicosis, and mediastinitis to the etiological factors of this type of diverticulum.

It is with the thoracic or deep seated diverticula that we are mostly interested in this paper. This type is perhaps not occurring more frequently than heretofore but it appears that they are being diagnosed more frequently. This of course is due to improved diagnostic methods which are now available, one of the most important being the fluoroscopic examination.

Carman<sup>5</sup>, in his book, has given us an excellent historical summary of the diagnosis of deep seated diverticula. Before 1892, when Bordoni reported a diverticulum of the lower third of the esophagus, the cause of symptoms of regurgitation, difficulty in swallowing, painful pressure, cough, etc., were demonstrated only at necropsy.

During the next few years, cases of this type were diagnosed by means of clinical tests and processes of elimination.

In 1898 Reitzenstein was the first to confirm clinical evidence of a deep seated diverticulum by means of x-ray and since then, it has been universally employed for confirming the diagnosis.

From 1892, when Bordoni's article appeared, to 1919, Carman has reported 14 cases of deep seated diverticula, adding one case of the epiphrenic type. Dr. L. A. Smith added three cases to this series which were not reported by Carman.

From 1919 to 1926, inclusive, Dr. L. A. Smith<sup>6</sup> collected 26 cases from the literature and added 10 of his own during 1927 and 1928 making a total of 36 cases, 18 of which were in the lower third of the esophagus.

Since 1928 Dr. C. H. Heacock<sup>7</sup> has collected 33 cases and added two of his own, making 35 cases, the two reported by himself being in the lower third.

In addition to the above, cases have been reported by the following: Edward L. Jenkinson<sup>8</sup>, 15 cases of the lower third; P. B. Goodwin<sup>9</sup>, one case; Ivan Wooley<sup>10</sup>, one case at the junction of middle and lower thirds, found at autopsy; Z. P. Zohlen<sup>11</sup>, one case in lower third; Herbert Holder-

man<sup>12</sup> reports a case of congenital atresia of the esophagus with an esophageal diverticulum and tracheo-esophageal fistula in a child 5 hours old.

Total number of cases reported were 108, 36 being in the lower third of the esophagus.

The clinical symptoms in most cases of deep seated esophageal diverticula have a general likeness. The cases may be classified under two headings: 1st. Those with subjective symptoms manifesting themselves with difficulty in swallowing and breathing with a feeling of pressure or pain in the lower substernal region over a long period of time. There may be vomiting, cardiac pain, palpitation, cough, and dyspnea. The vomiting and regurgitation of food may be associated with the difficulty in swallowing. 2nd. Those cases with objective symptoms which are only diagnosed by x-ray or other methods of physical examination. Dessecker claims that a history of cardiospasm can always be elicited in these patients but in reviewing the literature only approximately one-third of the cases had symptoms of an associated cardiospasm.

Cases presenting the above symptoms should always be confirmed by an x-ray examination, and when found must be differentiated from diaphragmatic hernias and malignancies of the cardiac portion of the stomach.

The following case is reported: White female, aged 86. Several years prior to 1922, patient had considerable difficulty in swallowing, often having to leave the table to bring up her food. In 1922 she had a severe shock from having been thrown against the steering wheel of an automobile. After this accident, she had more difficulty in swallowing, regurgitation of food, cough, fulness in lower sternal region, and some pain. At this time she was advised by her physician to have an x-ray examination which she did and it revealed a large diverticulum in the lower third of the esophagus. The x-ray examination was done by Dr. Clinton at the Middle Georgia Sanatorium, Macon, Ga. One year later he did a second examination which gave practically the same x-ray findings.

During the following five years, she learned to empty the sac by postural drainage and was quite comfortable until Octo-

ber 1929 when she had some intestinal trouble. She was advised to have another x-ray examination and this was done by Dr. Richardson of Dublin, Tex. He found the diverticulum, according to the patient's statement, to be about the same as reported by Dr. Clinton. She was still complaining of gas and intestinal disturbance July 1930 when she was referred to me for a complete gastro-intestinal series. The x-ray examination gave the following findings:

There was a large diverticulum in lower third of esophagus about two and one-half inches above the diaphragm. It extended anteriorly and to the right of the esophageal lumen, was approximately 10 cm. in diameter, and held about 250 cc. of fluid and retained food particles. There was a moderate cardiospasm associated with the condition. The diverticulum remained filled until patient instituted postural drainage. The stomach showed slight dilatation and ptosis. Peristalsis active and motility free. No deformity made out in stomach or duodenal cap. There was a diverticulum approximately two and one-half cms. in diameter noted in second portion of duodenum. No six hour gastric retention but there was retention in both esophageal and duodenal diverticula. Colon filled with no delay to barium enema and there was no evidence of a diverticulosis here. Patient was placed on smooth diet and at last report she was comfortable but still having to empty her esophageal diverticulum.

#### SUMMARY

A review of the literature shows a collection from various authors of 108 cases of thoracic diverticula of the esophagus since 1892, the majority of which have been reported within the last 10 years. 36 of these occurred in the lower third of the esophagus.

The cases collected appear to indicate that it is probably not occurring more frequently than formerly but is being diagnosed more often.

It is apparent that the majority of the authors from whom these cases were collected consider that a congenital weakness of the esophageal musculature is an essential predisposing factor in its etiology.

A case of multiple diverticulosis is presented involving the lower third of the

esophagus and second portion of duodenum. Cardiospasm was an associated phenomenon.

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#### THE EFFECT ON THE TOXICITY OF TETANUS TOXIN OF WITHHOLDING WATER FROM THE DIET\*

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The fact that the living organism loses weight when it is deprived of water has been known almost from time immemorial but we are indebted to Underhill and Fisk<sup>1</sup> for data on the loss in weight of the different organs of the body during dehydration. They have shown that severe dehydration through water deprivation or by an increased osmotic power of the blood caused the tissues of the organism to lose their essential water. The skin and muscles suffered the greatest loss in weight of the tissues examined but they did not report on the loss in weight of the nervous system.

\*Read before the Association in annual session, Birmingham, April 23, 1931.

\*From the University of Alabama, School of Medicine.



Underhill and Fisk<sup>2</sup> found that the skin of rabbits, which had been dehydrated by means of the drug pilocarpine, lost more water than the other tissues even though the diet consisted of cornmeal and beets or oats and carrots.

The normal water balance of the individual has been altered in certain diseases and the effect seems peculiarly beneficial in some cases. One of the diseases that is mitigated by withholding water from the diet is epilepsy. The work of Fay<sup>3</sup> is of particular interest since he has shown that 94 per cent of his cases of epilepsy improved under dehydration treatment. Many of his patients had failed to find relief in other measures such as ketogenic diet and bromide treatment. Patients who had had several convulsions per day were maintained for long periods without any attacks, if the water intake was kept low. That is, the total water intake was limited. Just how dehydration brings about a cessation of the convulsions has not been determined but certainly a high per cent of those suffering from epilepsy have been relieved by the measure.

The effects of certain drugs on dehydrated animals were investigated by Crisler<sup>4</sup> who found that morphine and magnesium sulphate were much more toxic if the animals had been dehydrated from 48 to 72 hours previous to the injection. Crisler noted the opposite effect in the case of pilocarpine, the animals being less susceptible.

Since tetanus toxin affects the nervous system and since certain toxic substances are reported to have killed dehydrated experimental animals much quicker than normal animals, it seems highly desirable to know the effects of dehydration on the potency of tetanus toxin. Also, since Fay found that dehydration treatment relieved many of his patients who had been having several convulsions per day, it was thought that such measures might be beneficial in case of lockjaw.

My paper deals with the effects on the susceptibility of guinea pigs to tetanus toxin or lockjaw, which is caused by the bacterial toxin elaborated by the *Bacillus tetani*, when water is withheld from the diet. The toxin used in these experiments was supplied by one of the drug houses and is very potent, two hundredths of a milli-

gram per kilogram body weight being lethal for guinea pigs in four to five days. In other words, one gram would kill 50,000 kilogram or about 55 tons of guinea pigs.

In these experiments, 10 milligrams of the tetanus toxin was dissolved in 1,000 cc. of physiological saline solution. The dose was divided into two portions and injected subcutaneously on either side of the flank. All doses employed were larger than a minimum lethal dose. The number of animals used in each series of experiments has varied from 4 to 12, depending upon the nature of the experiment. The curves or graphs represent averages in all cases.

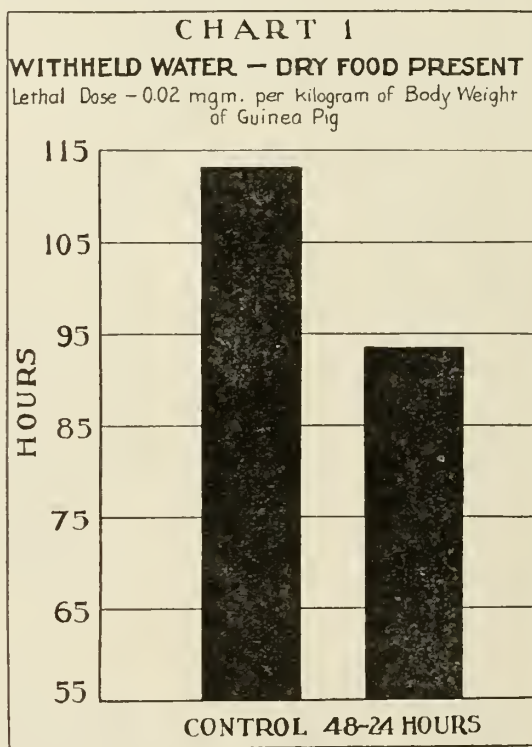
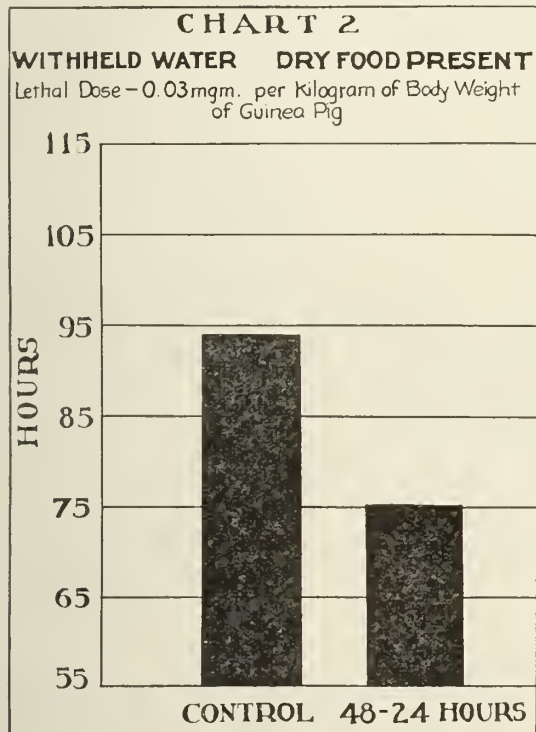


Chart 1 shows the effects on the toxicity of tetanus toxin of withholding water from the diet when you have dry food present, —alfalfa, hay and oats. The graphs represent averages of the time that was required to kill the guinea pigs in each group. The first graph shows how long it took to kill the control pigs on a normal diet (hay, oats and water), when 0.02 milligram of the tetanus toxin was injected subcutaneously per kilogram body weight. The second graph shows that pigs which had been dehydrated for 48 hours previous to being injected and then dehydrated for 24 hours more were much more susceptible to

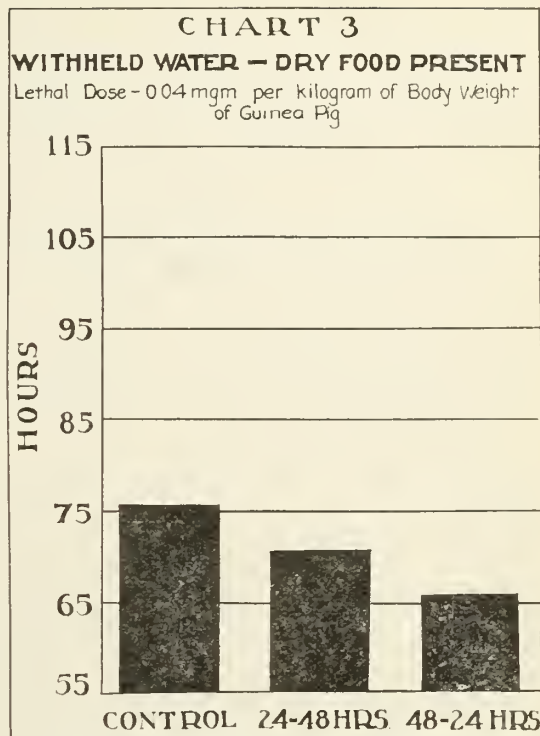
the toxin. The time required to kill was reduced about one day.

The conditions of the experiments represented in Chart 2 were similar to those in Chart 1 except the lethal dose was increased fifty per cent. The first graph is for the controls as in Chart 1. The sec-



ond graph shows the effect of injecting the toxin after 24 hours dehydration and then dehydrating for 48 hours more, while the third graph represents the effects of 48 hours dehydration previous to the injection and 24 hours further dehydration. Again the time required to kill is reduced about 20 per cent.

The animals employed in Chart 3 were injected with twice the size dose that was given to the pigs in Chart 1. In the case of the dehydrated animals shown in the second graph, we can see that the time required to kill was definitely reduced from that of the controls. The time re-

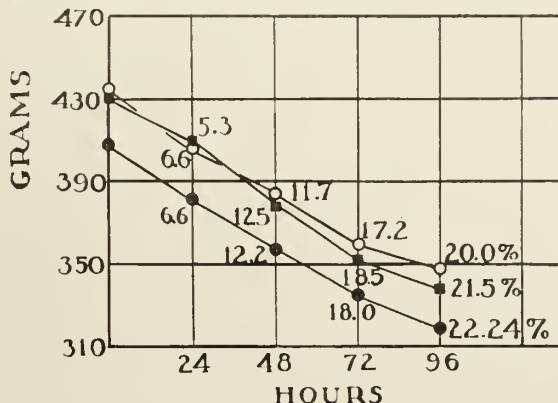


quired to kill, in case of 0.04 milligrams per kilogram body weight, was reduced about 15 per cent.

Since animals lose weight when given a lethal dose of tetanus toxin, a series of control experiments were conducted to show how much the loss in weight might vary under different conditions. These experi-

**CHART 4**  
**CONTROL EXPERIMENTS SHOWING LOSS IN WEIGHT OF NORMAL GUINEA PIGS UNDER VARIOUS CONDITIONS**

- Withheld water for 96 hours [Dry food present]
- Withheld food for 96 hours [Water present]
- Withheld food and water for 48 hours - Added dry food and withheld water for 48 hours



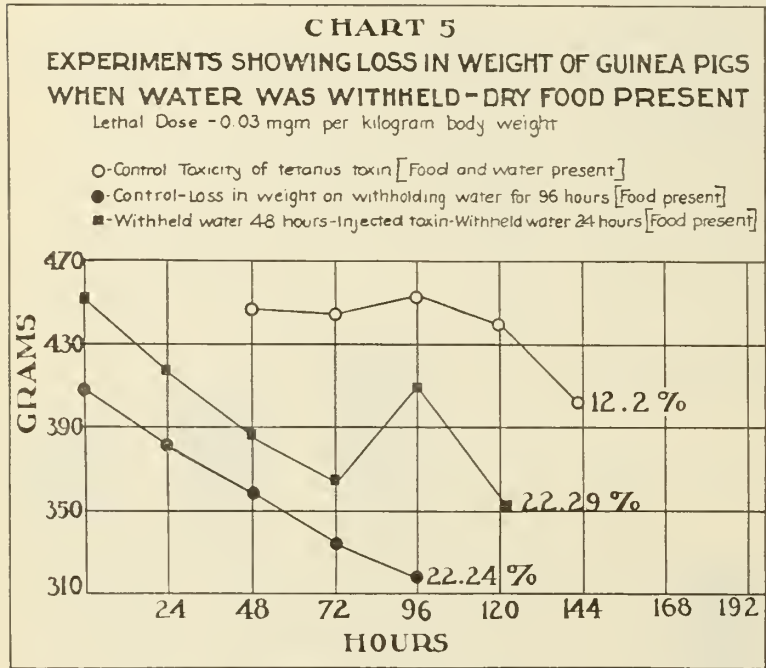


ments were run over a period of 96 hours, which is one day longer than the water was withheld from the animals represented in Charts 1, 2, and 3, and the data are given in Chart 4. There was very little difference

tuce, cabbage, beet tops, cauliflower, mustard, spinach, and celery) and water, and (2) green food and water as above and in addition 30 per cent sodium chloride solution was given *per os* to induce diuresis. Other diuretics such as caffeine, theocin and urea were used but were found to be less effective in these experiments than salt solution.

Guinea pigs were injected subcutaneously with 0.03 milligram of tetanus toxin per kilogram body weight and put on a diet of green food and water. The results are included in Table 1. Even though this part of the investigation is still in progress, it is encouraging that more than half of the animals lived considerably longer than the control animals. One out of ten animals lived and is recovering rapidly.

Other guinea pigs were



in the losses in weight of the different groups as you can see by the curves. The animals did not seem to be severely affected and they gained weight rapidly when given a normal diet.

Chart 5 shows the loss in weight of guinea pigs that were injected with 0.03 milligrams of tetanus toxin per kilogram body weight. From the curves it can be seen that the dehydrated pigs lose much more weight than the pigs which received an equivalent dose of the toxin but were given a normal diet. Also, the loss in weight of the dehydrated pigs, which were injected with the toxin, was about the same as that of the control pigs which were dehydrated for 96 hours.

These experiments show that a decreased water intake intensifies the action of the tetanus toxin and suggest that forced liquids might alleviate lockjaw. The following preliminary experiments support the hypothesis that excess water prolongs life when a lethal dose of tetanus toxin is injected subcutaneously into guinea pigs. Two methods were used to increase the water intake: (1) Green food (carrots, let-

TABLE 1  
THE EFFECT OF GREEN FOOD ON THE TOXICITY OF TETANUS TOXIN  
Lethal Dose—0.03 Mgm. Per Kilogram Body Weight of Guinea Pig

Guinea Pig No.	Weight Grams	Maximum Loss Weight Per Cent	Time Until Minimum Weight Days	Effects
1	461	15.4	14	Lived
2	408	15.3	7	Died—177 hrs.
3	542	12.9	6	Died—144 hrs.
4	296	3.7	5	Died—119.5 hrs.
5	285	19.3	4	Died—94 hrs.
6	341	11.4	4	Died—96 hrs.
7	344	14.6	4	Died—88.2 hrs.
8	315	6.9	4	Died—96.2 hrs.
9	570	15.6	5	Died—118.5 hrs.
10	652	5.9	6	Died—145.7 hrs.
Average Control	385	12.2	4	Died—94.0 hrs.

injected as those in Table 1 and put on a diet of green food and water with the addition of 30 per cent salt solution *per os*. The results are given in Table 2. Again more than fifty per cent of the animals seemed to be benefited by the increased water intake. Two out of seven of the pigs lived and are recovering rather rapidly.

SUMMARY

The dehydration of guinea pigs for 48 hours previous to being injected with a

TABLE 2

THE EFFECT OF GREEN FOOD AND 30% SALT SOLUTION ON THE TOXICITY OF TETANUS TOXIN.

Lethal Dose—0.03 Mgm. Per Kilogram Body Weight of Guinea Pig.

Guinea Pig No.	Weight Grams	Salt Solution 4 Times Daily		Maximum Loss Weight Per Cent	Time Until Minimum Weight Days	Effects
		cc.	Days			
1	501	1	7.5	13.9	9	Died—215 hrs.
2	379	1	7.5	11.3	14	Lived
3	518	1	7.5	22.5	15	Lived
4	300	2	3.5	5.0	4.5	Died—108 hrs.
5	630	2	3.5	12.3	4	Died—96.4 hrs.
6	607	2	3.5	10.0	4	Died—104 hrs.
7	553	2	3.5	6.8	4.5	Died—105.5 hrs.
8	527	2	4.0	9.8	5.5	Died—139 hrs.
9*	301	.....	4.0	.....	.....	Died—95.7 hrs.
Average Control	385	.....	.....	12.2	4	Died—94 hrs.

lethal dose of tetanus toxin and a further dehydration of 24 hours lowered their resistance to the toxin and they died much sooner than the control pigs on a normal diet. From the data in Chart 4 one can see that normal animals lose about 5 per cent of their weight the first twenty-four hours after being put on a dry diet without water or on a starvation diet with water. In other words there is a shrinkage of about 25 grams in 24 hours for a 500 gram guinea pig and this loss in weight is due largely to excreta. Then the control animal in all probability receives a larger dose in proportion to the weight of living tissue than does the animal that has been dehydrated for 24 or 48 hours and still the dehydrated animal is killed quicker. These results are just the opposite from those of Fay<sup>3,5</sup> in the treatment of epilepsy, who found that the major forms of the convulsive seizures can be modified or controlled by limiting the water intake. The results, however, are in accord with the results of Crisler<sup>4</sup> on the toxicity of morphine and magnesium sulphate, who noted that both drugs killed rats much sooner if they had been dehydrated for 48 hours or more. Preliminary results indicate that diets consisting of green food and water, and green food, water and 30 per cent salt solution are both beneficial in the treatment of lockjaw.

#### CONCLUSIONS

1. Guinea pigs were much more susceptible to tetanus toxin if they had been

dehydrated for 48 hours previous to the injection and then dehydrated for 24 hours more.

2. Preliminary results indicate that a diet consisting of green food and water is beneficial in the treatment of lockjaw.

3. A diet consisting of green food, water and 30 per cent salt solution also seems to be beneficial in the treatment of lockjaw.

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#### DISCUSSION

*Dr. J. S. McLester, Birmingham*—That is a fine piece of work which Dr. Carmichael has done. An interesting thing is that by changing the water balance within the tissues he has achieved in lockjaw results which are the opposite of those seen in the ketogenic treatment of epilepsy. It is known that the physico-chemical states of acidosis and dehydration go hand in hand, as do, on the other hand, the opposite states of edema and alkalosis, and that the former is beneficial in epilepsy; the



latter, from what Dr. Carmichael tells us, should be beneficial in tetanus. At any rate, we are justified in concluding that we would do well to give our tetanus patients liberal quantities of salt solution or glucose solution intravenously, and thus introduce an abundance of water into the circulation.

### THE AGE OF SYPHILIS\*

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The present age has been aptly called the age of syphilis, because, apparently, the disease is more prevalent now than at any other time in the history of our country. Because of the secrecy which has always shrouded venereal diseases we do not now know and perhaps never will know the exact incidence of syphilis; but sufficient is known of its present prevalence to justify the conclusion that it is one of the most common of all the infectious diseases.

According to statistics compiled by Commissioner of Health, Bigelow, of Massachusetts, in the area of the United States where syphilis is reportable, there has been since 1920, 35,000 more cases of syphilis than scarlet fever, 79,000 more than all forms of tuberculosis, 500,000 more than diphtheria and three times as much as typhoid fever. Dr. Warthin, an eminent pathologist, claims to have demonstrated *Treponema pallidum* in 40 per cent of a series of autopsies at the University Hospital of Ann Arbor. Dr. William Halperin, in an analysis of 1,088 cases of deaths coming to autopsy, found that a definite diagnosis of luetic infection occurred in 21 per cent of the cases. The State Board of Health in 1930, co-operating with the Rosenwald Foundation, examined the blood of 3,500 negroes in an area in Macon County. 35 per cent of this number were found to have positive Wassermanns. Of the adult negroes, approximately 50 per cent were positive. These figures coincide somewhat with a similar experiment which was carried on in a group of rural negroes in Mississippi. It is to be remembered, however, that the blood Wassermann is not a true index to the exact amount of syphilis. It is probably not over 70 per cent efficient as a diagnostic criterion in late infections.

Dr. Osler estimated that a certain per cent of the deaths from heart diseases, cerebral hemorrhage, angina, Bright's disease, meningitis, epilepsy, etc., was due to syphilis. By applying these percentages to the mortality tables we are able to estimate the number of deaths from this disease. For the past three years in Alabama there has been an average of 2,100 deaths and 1,650 stillbirths per year. This places syphilis fourth as a cause of death. If stillbirths are considered as deaths it places it at the top as a cause of death in this State.

In theory syphilis should be one of the easiest of the communicable diseases to control. First, it is a disease which can be prevented by the use of proper prophylactic measures after exposure; and secondly, there is no other communicable disease which in a great majority of cases can be rendered non-infectious within twenty-four hours by the injection of a chemical as arsphenamine. Stokes says, "There is such a therapy for syphilis and from the standpoint of public health, though not necessarily that of the infected person, this gives one the key to the citadel and to the ultimate conquest of the disease as a widespread human ailment".

Many methods of control have been advocated, all of which have, no doubt, been of some value. Such are education, segregation, prophylactics, licensing of prostitutes and the treatment of infected individuals. The last seems to have proven to be the method of choice. It is certainly the most practical measure for this State at the present time. While we do endeavor to carry on a limited amount of educational work, our chief method of assault is against the infected individual. By this is meant placing treatment within the reach of every infected person in the State and at such cost to the indigent or semi-indigent that it will not place a financial burden upon him greater than he can bear. All doctors realize that many patients must receive free treatment if they are treated at all. Unfortunately, syphilis often attacks an individual during the unproductive period of life when his earning capacity is very low or even nil. In later years when he may have gained success in the professional or business world he finds himself breaking with a disease which could have been cured easily in early youth. At this advanced

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\*From the State Department of Health.

stage, it may be too late; the disease has done irreparable damage to some vital organ.

A man earning \$10.00 per week, and many are now not earning more, who contracts lues, cannot be expected to meet a \$5.00 per week doctor's bill for a year or more. It may not be his fault that his earning capacity is low. He certainly would be earning more if he could. Shall we condemn him because he has syphilis? Surely, the physician must not judge him too harshly.

If this individual does not receive proper treatment he becomes a potential liability, the chances being great that in later life he will break with one of the terminal stages of lues and become a direct charge on the State. Becoming thus incapacitated he leaves a family without support and they too are likely to become liabilities on the State.

As previously stated, the principal method of control in Alabama is the effort to reach the infected person. This has a two-fold purpose. From the patient's standpoint it may prolong his life and increase his productive power, making him an asset rather than a liability to the State. From a public health standpoint it renders him non-infectious, thereby preventing the spread of the infection.

The State Board of Health now maintains fifteen venereal disease clinics, located in the larger cities. These clinics are conducted by practicing physicians who devote certain hours to the work and are paid for their services by the State. These clinics serve the indigent class. Further, there are 190 physicians working with the State Board of Health in the co-operative venereal clinics. These co-operative clinicians are selected by the several county medical societies. They receive no pay from the State but are furnished free of charge the drugs necessary for the treatment of semi-indigent patients, from whom a small fee is collected by the physician. In addition to these free clinics and co-operative clinicians, the State Board of Health furnishes to any physician in the State drugs free of cost for the treatment of his indigent cases.

In reviewing the history of treatment we find in the poem, "Syphilis", by Fracoto-

rius, an interesting description of how mercury was found. Callahoe, a nymph, having the power to chase away disease leads a young man into a cavern where there is running a river of quick silver. In the depth of the earth he finds this sacred river and is told that if he immerses himself three times all corruption would be taken out by the fluid metal. Thus the remedy obtained confidence and fame amongst the people. The mercury began to be mixed with lard and applied to the body in the form of an ointment. In 1831 Wallace, of Dublin, Ireland, first used potassium iodide in the treatment of syphilis. In 1910 Dr. Paul Ehrlich, a chemist of Berlin, Germany, gave to the world "606", thus named because it represented his 606th experiment with arsenic. A little later he prepared "914" or neoarsphenamine. In 1922 Sazarac and Levadite introduced bismuth in the treatment of syphilis, a drug which is now thought by many to be superior to mercury.

We now have almost as many methods of treatment for syphilis recommended as there are syphilologists in the country. However, most of these methods vary but little and are all based on the intensive administration of neo- or arsphenamine, used together or alternated with bismuth or mercury. Syphilologists are generally agreed that to obtain the best results in the treatment of early syphilis there are three important principles to be adhered to: (1) An early diagnosis made when possible by a dark field examination; (2) The institution of vigorous treatment as soon as a positive diagnosis has been made; (3) Intensive treatment with neo- or arsphenamine and bismuth or mercury for at least one year, regardless of the Wassermann reaction.

The general practitioner is constantly calling for a standardized method of treatment. It would certainly be ideal if we could lay down a standard applicable to all cases. However, this is not feasible for in late syphilis the individualization of treatment is very necessary. The method and extent of treatment is to be governed by the organ attacked and the extent of injury done. A case of cardiovascular syphilis should certainly be treated very much more cautiously than a case of luetic osteitis. In



early syphilis we are able to standardize the treatment to a large extent. As yet, however, there is no general agreement as to the best plan, though the individual treatment technique among specialists often varies but slightly. Below is given the standardized technique agreed upon by the committee of experts appointed by the United States Public Health Service. This plan of treatment is applicable in uncomplicated early syphilis. When arsphenamine is substituted for neoarsphenamine the number of treatments may be reduced. When neo- is used it should be given in .6 to .9 gram doses; bismuth in .2 gram doses. Both neo- and bismuth are to be given at weekly intervals. The plan is as follows:

(For clarity of description I have divided it into series.)

- Series 1. Neoarsphenamine, 12 injections. Bismuth, 4 injections.
- Series 2. Neoarsphenamine, 10 injections. Bismuth, 6 injections.
- Series 3. Neoarsphenamine, 10 injections. Bismuth, 8 injections.
- Series 4. Neoarsphenamine, 10 injections. Bismuth, 10 injections.
- Series 5. Neoarsphenamine, 10 injections. Bismuth, 10 injections.

This is a continuous plan of treatment, requiring 90 weeks for completion, one series followed by the other with no rest periods. It is recommended that potassium iodide be given along with bismuth. Mercury may be substituted for bismuth, although preference is given to bismuth. It is felt that this plan of treatment will cure from 80-100 per cent of the early cases.

The State Board of Health, in co-operation with the Rosenwald Foundation and United States Public Health Service, is conducting an experiment which may prove of real practical value in the management of syphilis in rural districts. The purpose of this experiment is to determine the incidence of syphilis among rural negroes and the feasibility of treatment. Although complete data are not yet available, some interesting facts seem to have been demonstrated. The experiment began in March 1930 and is being conducted in a rural area in Macon County, the population of which is made up largely of negro tenant farmers. A Wassermann was made on all ne-

groes in the area. There were 3,515 negroes examined, of whom 1,247 or 35 per cent gave positive reactions. It was obvious that in order to reach this group the treatments must be made easily accessible. This was accomplished by holding clinics on scheduled days in school houses and churches which were conveniently located in the area.

The work is being conducted under the direct supervision of Dr. E. S. Miller, County Health Officer of Macon County. A negro physician administers the treatments. He is assisted by a negro nurse who devotes part of her time to follow-up work.

The plan of treatment was outlined by Dr. O. C. Wenger, of the United States Public Health Service. It consists of a year's treatment with neoarsphenamine and mercury and in certain cases potassium iodide. The neo- is given at weekly intervals and the mercury administered by means of a belt which the patient wears six days in the week. Where mercury and neo- are contraindicated potassium iodide is the only drug used. The plan is as follows:

First and second months, neo- and mercury; third month, mercury; fourth month, neo-; fifth month, mercury; sixth month, no treatment; seventh month, neo-; eighth month, mercury; ninth month, neo- and mercury; tenth month, no treatment; eleventh and twelfth months, mercury.

An interesting feature of this experiment is the method of administering mercury by means of a belt which is worn about the waist just above the hips. At each clinic visit the patient is issued a week's supply of mercurettes. He is instructed to place from one-sixth to one-half of a mercurette under the belt each day, the amount used depending on the size of the patient and his tolerance for the drug. It is extremely important that these patients be examined for evidence of salivation at weekly intervals. The urine should be examined every month.

While complete data on this experiment are not yet available, I am able to present a few figures which seem significant. 926 of the 1,247 patients have received an average of 16.4 doses of neo- per patient. The maximum number of doses a patient can receive is 20. On the basis of 496 patients

who showed positive blood tests at the beginning and who have recently been retested 258, or 50 per cent, have become negative. In a small group of 21 cases, receiving potassium iodide only, neo- and mercury being contraindicated because of age and physical condition, none showed any change in the blood tests. The interesting features of this experiment may be summarized as follows:

1. A high percentage of rural negroes have syphilis.
2. Treatment by movable clinics seems practical.
3. The percentage of returns for treatment is high compared with that of venereal disease clinics in urban centers.
4. The mercury belt offers a very practical and efficient means of administering mercury to the negro.

It is to be remembered that there is no one method, no panacea for the solution of the venereal disease problem. The logical way to combat this disease is through an intelligent, well-balanced combination of all known measures.

#### DISCUSSION

*Dr. P. B. Moss, Selma*—Mr. President, as an old employee of the State Board of Health, I do not want to be in a position of appearing to be disloyal. I will give the health department credit for all it has done; I am thoroughly behind the department in all public health measures and always have been, but it seems to me it would be a little unfair to the medical profession of this and other states if this paper went entirely unchallenged from every standpoint. A question arises in some of our minds, those of us who still believe in the old principle of not being paternalistic in governmental affairs, as to whether it is quite fair to the medical profession for the State to undertake the treatment of diseases.

Now, understand, I have talked to Dr. Baker and other men who are thoroughly in sympathy with this proposition, and they claim that they do not intend to keep up this work forever; that it is purely an educational measure. We do not know how long they are going to carry on this process of educating, but it is a fact known to those of us who have taken the trouble to inquire into what has been done, that the men running these clinics are not particular in selecting only indigent cases. I know in my own community people are treated indiscriminately, and I have made some effort to estimate what it means to a profession to have one of these clinics located there, and I know it means thousands of dollars taken out of the pockets of doctors.

I am perfectly willing to agree that in cases which are absolutely unable to pay for treatment there may be some reason for running these free clinics, if those responsible are going to see whether those patients are able to pay or indigent, and it is still not fair to the medical profession. There is no more reason why the State should run a free clinic to treat venereal disease than to treat any other disease which is a public health problem, such as diphtheria, tuberculosis, etc.

*Dr. G. G. Woodruff, Anniston*—I have been very much interested in this paper of Dr. Wilson. I think he has brought us a good discussion of a condition we have with us, and one we are going to have with us from now on.

There are several points in which I am particularly interested. Dr. Wilson brought out the fact that 35 per cent of negro people are syphilitic, and that 50 per cent of adult negroes are syphilitic. That is the condition we have in our own homes where we have negro servants. I have talked to many of my patients about this problem of having servants that prove to be actively syphilitic, and I have rather urged housewives to require a certificate of health from those who apply as servants. I believe this would be a good thing for all concerned and that if the doctors would advise it among their patients, the various women's clubs in the communities would sponsor a movement to see that this was done.

Another thing I was particularly interested in was the method of treatment outlined by the Doctor. He outlined a method of treatment lasting ninety weeks that sounds mighty good, but I believe it would be hard to hold the average patient that long.

I have used the customary treatment of one series and then checked up with a Wassermann. If Doctor Wilson is getting from 80 to 100 per cent results, that is something we should think about.

I would like to ask Dr. Wilson if, from his records and statistics, there is any way of finding out where we are getting; if there is any way of telling whether we are getting anywhere in this treatment. It is a big subject, and we have to take it seriously, and I would like to know what progress we are making in prevention.

*Dr. J. N. Baker, Montgomery*—Everyone will admit that this is an important question. It so happens that the Constitution of this Association has written into it these words: "The State Board of Censors shall elect from the College of Counselors an executive officer to be known as the State Health Officer." It is now my privilege to serve you in that capacity. I think if I had the re-writing of the Constitution of this organization I would change the words "State Health Officer", under our system, to "Director of Public Health". That would signify, more nearly, I think, the purposes and aims the organized profession of this State seeks to accomplish, and that is exactly what I am expected to do. But I would remind you that long before I took up this work, I served in the humble capacity of a general practitioner and surgeon. There is hardly a problem that confronts the medical profession today in Alabama that has not been my own personal problem. When I view these problems of public health, I first view them



through the eyes of the general practitioner with the aim in view to conserve and protect his interests.

But, throughout this far-flung field of public health, we are eternally encountering problems which take us over into that twilight zone bounded by purely preventive medicine on the one side and by curative, or individualistic, medicine on the other. The question now under discussion, syphilis, leads squarely into this mooted zone, for the very simple reason that its *curative* aspect looms so large in any and all efforts at control. The only known way to quickly render an *infectious* case of syphilis *non-infectious*, is through treatment. The problem which now confronts both interested groups is:—How may this objective be reached without doing violence to the interests of the general practitioner? Your health department is approaching this problem from two angles, as has just been outlined by Dr. Wilson. By means of the free clinic, solely for indigents, we hope to relieve the practicing physician of a part of his burden, and, at the same time accomplish something in its control and spread. Secondly, through our co-operative clinicians we are striving to tie in and interest as many as possible—now 12 per cent—of our physicians, by making the work worth while, from a financial view-point. Mistakes and, oftentimes, misunderstandings, when operating in this sector, are likely to arise. But I feel that with a better and fuller understanding of the many complexities of this problem and with a willingness on the part of all to work for the common good, the members of this great organization will ultimately arrive at a happy and satisfactory solution.

*Dr. Hugh Boyd, Scottsboro*—Just a few suggestions I want to make about the treatment of syphilis. The great thing in the treatment of syphilis is mercury. I have never been able to get patients to rub it in, but I have been able to get patients to walk on it. If you will put ordinary 30 per cent mercury on the bottoms of their feet when they get up in the morning they will walk that into them by night. They will all do it, and that is the most satisfactory way I have ever gotten mercury into the system. It is practical, it is common sense, and they will do it. Some of them object to ruining their socks. Well, they can buy all the socks they want for six or seven cents apiece,—wear those for a few days and throw them away. The great thing with syphilis is mercury. I am not sure you can cure it,—it has been my experience you can't. You can make it latent; you can keep it latent, but the way to do that is by mercurial ointment, ordinary 30 per cent mercury and the way to get it into them is to walk it in.

*Dr. T. E. Tucker, Monroeville*—Mr. President, I would like to make this suggestion: It is true that a negro likes charms and such things. The belt will probably work with a good many. As we know, the quacks and advertising cults have encouraged the use of belts. For instance, there was a so-called electric belt.

This, however, is the suggestion that I wanted to make: If we issue to the patient three or four mercurettes on Saturday, at the same time giving him a dose of neo-, I believe that we will get ex-

cellent results. The patient's intelligence should also be taken into account. Instruct him to rub here one day, and there the next, etc. We should warn him as to salivation. It is a good idea to advise him to rinse his mouth with salt water after meals. A negro likes grease, and will use the salt water.

Now another point, we might get into deep water here before we know it. Syphilis, like appendicitis and the poor, is with us always, as the doctor said. "Syphilisization" has apparently followed civilization. It is also apparent that the trend of the disease is upward. It has, without doubt, become a tremendous economic problem, as well as a health problem, in the South. For years our charitable and penal institutions have been on the receiving end of the line. Something must be done up at the other end of the line, since the expense at the receiving end must be reduced. Unfortunately, as we know, Dr. Partlow's institution is frequently the final receiving place.

Personally, I have no solution. I do not believe that there is a man here who has a solution which will meet this problem. It is a fearful thing. Dr. Chas. O'H. Laughinghouse of North Carolina several years ago wrote a wonderful paper, read all over the country, entitled "Shall we or shall we not?" We are treating the patient and telling him to "go and sin some more". Is it a selfish motive that we have? I think that it is right and proper that the doctor should get pay for his services, but the tremendous aspect of the economic problem must be considered. We know what it is, and how to do it, if we can and will get together. As physicians we are citizens of the State, stockholders of the State. Therefore it is a problem in which we are all interested. Something must be done and Alabama is a good place to do it.

*Dr. B. F. Anderson, Sellers*—I am located in a prairie section of Montgomery County where there are a great many negroes and much syphilis. Consequently I have had considerable experience along this line. It is indeed quite a problem to get pay for treatments administered. The negro simply has nothing now with which to pay. Recently I was compelled to refer some 45 cases to the free clinic in Montgomery county because of the inability of the negroes to pay anything. Before these panicky times hit us, many of these cases would have been able to pay something; possibly enough to justify my treating them, but not so now. I realize that the regulations governing the co-operative clinics permit the charge of a fee not to exceed two dollars, but most of my patients now can pay nothing.

In regard to treatment: A negro likes his "rubs" but if you are not very careful you will salivate him. If you tell him to rub a half or a fourth of a mercurette, he is very likely to use a whole one. He may lose his teeth as a consequence.

Finally, I would like to endorse treatment with bismuth. I seem to get better results from it than from neosalvarsan.

*Dr. W. T. Burkett, Tuscumbia*—Both to those engaged in practice and those engaged in public health this is a very interesting subject.

It is true that better co-operation in the treatment of the venereal diseases is gotten from the

negro than from the white patient. This is due, I believe, to the fact that the negro does not consider venereal disease a stigma. Education must be depended on to bring to a realization the conception that syphilis is an infectious disease that must be looked on in the light of other infectious diseases.

I am aware of the fact that there are those who feel that treatment of venereal diseases lies altogether within the province of the practicing physician. I am aware, too, that many patients cannot pay anything for treatment. There is a line between these limits that can be drawn by a proper understanding between local public health officials and the medical profession.

At Tuscumbia we have a clinic that has been in operation without complications for several years. Complications can be avoided if cases are referred to the clinic on certificate from the practicing physician. Such is the plan in operation in Tuscumbia and it works admirably. If a patient states he has no physician he is told that he will have to select one.

Perhaps additional clinicians in a county would serve further in the solution of the difficulties.

*Dr. Wilson (closing)*—Considerable time has been spent in the discussion of this paper and I think it hardly worth while for me to add to it. I do, however, want to thank the gentlemen who have taken part in the discussion.

I have a card which was passed up from the audience requesting that I say something relative to the use of mercury intravenously. The intravenous administration of mercury has two advantages over intramuscular injections. First, it is absorbed very rapidly, and secondly, it is not accompanied by the severe after-pains which follow intramuscular injections. The preparation which we use in our clinics and recommend is mercurosal. There is only one objection to its use that I know of, and that is, its tendency to obliterate the veins.

A number of questions regarding proper technique for the treatment of syphilis have been brought up and some have disagreed with the methods outlined. I do not desire to enter into a controversy as to what constitutes the ideal method of treatment. As I said in the paper, there are as many methods as there are syphilologists. The methods which I have outlined are not original with me, but are methods recommended by the committee of experts on syphilis appointed by the United States Public Health Service.

## RECENT PROGRESS IN PEDIATRICS\*

CLIFFORD L. LAMAR, M. D.  
Birmingham

Normal development and progress of a science occur along certain definite lines. First, there is the initial discovery by an individual of a certain basic principle, to which is added the experience of other observers. As time goes on, a mass of kin-

dred information and misinformation is added, the observers become more experienced and the truth or falsity of certain beliefs become established. When a certain point is reached, the growth of the science becomes orderly and the method of attack on its unsolved problems more or less apparent. The signs of true progress in any science are shown by the manner in which science receives, correlates and embodies the new discoveries affecting it. Coincidentally the processes should become simpler rather than more complex.

Pediatrics began as a specialty when medicine was just entering its period of orderly growth. At that time there was almost as much erroneous belief, that has been later disproved, as there was real knowledge that has stood the test of years. At the present we are reaching a period where new discoveries, instead of destroying the basic ideas that we hold, are somewhat anticipated and are readily incorporated into them without conflict. During the past few years great progress has occurred in the field of pediatrics both in regard to simplification as well as in the employment of the newer knowledge supplied by many sources.

It is not my purpose to attempt to cover even a limited field like pediatrics but to bring to your attention only those evidences of progress that appear to have a practical bearing on our every-day problems. I shall try to present what might be called a critical review of a part of pediatric literature.

### DIGESTIVE SYSTEM

The problem of feeding infants artificially was the foundation of pediatrics. As the specialists in obstetrics chose to extend their field backward into the prenatal period, the postnatal period of infancy and childhood, with problems other than infant feeding, was left to the pediatricists.

It has taken a great many years of work by able men for infant feeding to reach its present state of simplicity. Pediatrics has been fortunate in having so many sources of progress to furnish contributory help; for along with the increase in the knowledge of the physiology and chemistry of infant digestion have come developments in such utterly foreign fields as refrigeration and the canning of foods. These have been

\*Read before the Association in annual session, Birmingham, April 21, 1931.



a distinct help. During this same period of time the public has been instructed both formally in schools and informally by advertisements and articles in lay magazines regarding bacterial diseases that are preventable by proper care and the sterilization of foods and cooking utensils.

Much of this collateral information has been embodied in our methods of infant feeding. As a consequence we now feel that this problem, for all practicable purposes, has been simplified sufficiently for all ordinary conditions. Moreover the means of meeting extraordinary conditions have been amplified to meet our desires.

To return to a consideration of the direct efforts of medical men in improving the status of infant feeding, real progress has occurred in the newer conception of the influence of factors outside the digestive tract upon behavior of the tract. We know now that various digestive disorders, once attributed to an error in feeding, are due to infections in other parts of the body. The knowledge that these parenteral infections do cause diarrheas induces us to look for them where they may be found rather than make frequent and useless changes in the diet.

As a result of chemical studies on body fluids during the course of true infectious diarrhea, need for water in the body's vital processes was definitely determined. There is basis in fact, therefore, for the use of normal saline, Ringer's solution, glucose and transfusions of blood and they have been most successfully employed. The realization that under ordinary conditions intraperitoneal injections of fluid are both safe and effective has offered a relatively quick and painless route for supplying fluid. The advantage of a transfusion with blood lies not only in the restoration of blood volume but also in the introduction of immune bodies that may aid in combating the infection. No other specific remedy has received support in the treatment of these infections.

#### VITAMINES

America has become vitamine-conscious, thanks to the growers of citrus fruits and the exploiters of yeast. In more serious vein, though, I want to refer to the very valuable work done by Mellanby of England on vitamine D. He has shown the val-

ue of this vitamine in the cure as well as prevention of dental caries. This work is sufficiently convincing for us to insist on the inclusion of a certain amount of viosterol or cod-liver oil in the diet of infants and young children. It has been known that rats fed on a diet insufficient in vitamine A will develop diseases of the upper respiratory tract. For this reason it is advisable to use cod-liver oil during the winter months when these diseases are more likely to occur. Mellanby has also attempted to prove the value of vitamine A in the treatment of acute pyogenic infections but his series is too small to warrant conclusions.

In regard to viosterol, it should be said that it is not a real substitute for cod-liver oil because of its complete lack of vitamine A. However, it is valuable as a reinforcing agent in cod-liver oil.

#### THE ACUTE INFECTIOUS DISEASES

It is in this field that the most remarkable progress has been made. For this reason I would like to make a few general remarks before taking up each disease by itself.

Whatever success has been attained in the treatment of the acute infectious diseases has been due solely to the introduction into the body of antitoxins or antibodies by means of blood serum—human or animal as the case may be. The much heralded use, a few years ago, of antiseptic drugs intravenously has failed to give good results.

In the early period of incubation of a disease, a relatively small amount of antiserum is needed to overcome the infection. Therefore, in infants and young children who, for general or specific reasons, need protection, it is both practicable and simple to inject immune blood from one or both parents. The pain is not great and the technical difficulties are not significant. I should like to emphasize the importance of affording such protection to the very young. Not only is the method well adapted to them but a greater impression can be made on the mortality rates of this group than on those of the older age groups.

When the disease has developed, so much more antiserum is needed that the giving of whole blood is impracticable except as a transfusion. For this reason we have to

employ, for the most part, a serum of known potency obtained from the horse.

The use of horse serum has the disadvantage of provoking anaphylactic reactions varying from minor discomfort to severe shock, in those individuals sensitive to it. So many children have been rendered sensitive to horse serum through the administration of diphtheria toxin-antitoxin or tetanus antitoxin that a test for sensitiveness should be made. Practically anyone can be desensitized and this will prevent the more serious anaphylactic reactions.

*Diphtheria:* Now that active immunization against diphtheria has been in practice some ten years or more, we can see real progress toward the conquest of the disease. In those communities where health authorities have had proper co-operation in the immunization of practically all children, diphtheria has been eliminated as a real factor. A report coming from the government covering the registration area for the past ten years, however, has shown a disappointingly small decrease in the mortality rate. There remains, then, much to be done. Sufficient time has elapsed to show that immunity acquired in infancy from toxin-antitoxin is permanent in practically all cases.

A recent change in active immunization is the substitution of toxoid, or anatoxin as the French call it, for the original toxin-antitoxin mixture. This toxoid is prepared by treating diphtheria toxin with formalin. It is thereby rendered non-toxic but is still able to stimulate the formation of antibodies. The great advantage of toxoid is that it does not contain horse serum and therefore does not sensitize the individual as does toxin-antitoxin. Since toxoid is more irritating to the tissues, it is recommended that it be given in two doses of one cc. with an interval of three weeks. This will give immunity in about 95 per cent of cases in from three to four months. At the end of this time a Schick test should be done and if positive, a third dose of toxoid should be given. This is usually sufficient to confer immunity in those not acquiring it with two doses.

In regard to the Schick test: The present feeling is that its value lies—(1) in testing cases after active immunization has

been attempted to see if further doses are needed; (2) in testing doctors and nurses who are constantly exposed to the disease and; (3) in testing intimate contact cases. All young children and infants over six months of age may be given toxoid without a preliminary Schick test. In a case presenting clinical evidence of diphtheria a negative Schick test should not delay the giving of antitoxin.

It does not appear that further progress has been made in the use of diphtheria antitoxin beyond the employment of the intramuscular route rather than the subcutaneous for quicker absorption. Intraperitoneal injections are recommended in those cases where the intravenous route is needed but cannot be used.

*Scarlet Fever:* Scarlet fever has occupied the center of the investigator's stage for the past few years. As a result, the mystery of its origin, its method of propagation and its treatment along specific lines have been clarified.

The discovery of the fact that a strain of the hemolytic streptococcus is the cause of scarlet fever is shared by Dr. Dochez and the Drs. Dick. This discovery establishes the fact that the disease is transmitted by contact with the organism in the discharges of the nose and throat and the ears, if they become infected, and not through the desquamations of the skin as once believed.

An antitoxin has been prepared by both of these workers and has been available for general use for several years.

It is expected that, with the introduction of a remedy for a disease that is so variable in its ability to kill or produce severe symptoms, there would be reports of variable success. The worst that has ever been said against this antitoxin is that it is horse serum and therefore may produce anaphylactic reactions or it is ineffectual. The experience that has come from its widespread use has proven that it is effective when given early in the disease. If it were not for its ability to produce anaphylactic reactions there would be no reason, except for the expense, for not giving it routinely to all cases seen early. The consensus of opinion is that every case that begins with a moderate or severe toxemia or angina should receive the antitoxin at the earliest possible opportunity. Patients



that have temperature of 102 or over, even if there are no marked signs of toxemia, should be given the serum, provided there is no history of marked sensitiveness to horse serum.

Serum administered within the first twenty-four hours of the disease can be expected to cause a critical drop in the temperature, blanch the rash and clear the toxic symptoms within 12 to 36 hours. After the first 48 hours of the disease the value of the serum is very much less; and it is not effective against the complications of the disease. The serum can be used to confer a passive immunity in the same manner that diphtheria antitoxin is used. Active immunization against scarlet fever by the use of subcutaneous injections of sterile toxin has been recommended by the Dicks. The fact that five or more injections are needed to secure immunity and that occasionally during the immunizing process symptoms of a mild scarlet fever attack occurs has prevented the general use of this procedure. However it must be said that active immunity can be obtained in this way and in most cases it is lasting.

*Measles:* Measles is attended by the highest mortality of all the more contagious diseases, the rate being about five times that of scarlet fever at the Willard Parker Hospital in New York City. According to a fairly recent report there are ten thousand deaths recorded annually in the registration area of the United States from measles and its complications. All deaths from measles might be said to be due to the wrong child contracting it or to a child contracting it at the wrong time. During the last few years knowledge that the blood of an adult who has had measles in early life has the power, when given subcutaneously to an infant or child, to prevent or modify the disease, has given us a means of controlling the severity of the disease in a large number of cases. With an increasing use of this procedure there will be a corresponding decrease in mortality.

The use of convalescent measles serum has been resorted to in a very limited way since 1901. In 1920 Degwitz recommended the use of serum from adults who had a positive history of measles. During the past two years the plan of obtaining blood from a parent and injecting it immediately under the child's skin has met with a ready

response. In most cases this plan has the attraction of being simple, safe and easy of accomplishment. Where the serum is separated from the plasma considerable time and laboratory equipment are needed.

When a complete protection is sought the method is to give 2 cc. of blood per pound of body weight on or before the fourth day of incubation and in certain cases this is necessary. This, however, gives only a passive, and therefore transient, immunity to the disease. The plan of choice, where a slight chance may be taken, is to seek to confer an active immunity by giving a somewhat smaller dose on the fourth day of incubation. This will not prevent the occurrence of the disease but will modify it to the degree of harmlessness. Both of these methods have been used with great success in Birmingham during the present epidemic of measles.

Tunnicliff who is generally thought to have isolated the causative organism of measles, a small diplococcus, has been attempting to manufacture a serum on a commercial basis but has not succeeded in doing so.

*Pertussis:* There has been no marked progress in the treatment of pertussis. Our hope at present in reducing the mortality in this disease lies in the possible prevention of it in the same manner as in the prophylaxis against measles. The use of vaccines appears to offer some value in prophylaxis but little in the treatment of the disease. Ether in olive oil for rectal injections is claimed to reduce the number of paroxysms. Work is now in progress on a toxin-vaccine measure which appears to offer more hope than anything offered so far.

*Infantile Paralysis:* Fifteen years ago, Rosenow of the Mayo Clinic announced his discovery of the causative organism of infantile paralysis but his claims never met general acceptance. At present the infection is believed to enter the body through the respiratory or alimentary tract in the form of a filtrable virus. Two widely separated epidemics have been thought to have been caused by the virus transmitted in raw milk since both stopped when the milk was pasteurized.

The beneficial effect in treatment with commercial antiserum is still doubted.

More encouragement has come from the use of human serum obtained from cured cases. This serum is given intramuscularly, intravenously or intraspinally. It is most likely to be of benefit in the acute pre-paralytic stage.

One authority recommends the use, intramuscularly, of 15 cc. for passive immunity during an epidemic.

*Meningococcic Meningitis:* There have been two rather minor but quite helpful improvements in the treatment of meningococcic meningitis. The first is the use of cistern puncture for the introduction of antiserum when lumbar puncture results in a dry tap. This procedure has the advantage of being easier to perform than a lumbar puncture and is perfectly safe if due care is taken. It permits the introduction of as large quantities of serum as are necessary in cases where, because of blockage, only a small quantity could be introduced through a lumbar puncture. The second improvement is in the use of different makes of antimeningococcic serum in the same case in order to secure a polyvalent effect. This is especially recommended in cases that appear to be resistant to serum treatment. This latter treatment was discovered in treating an epidemic of meningitis in the American Army of Occupation. It was found that cases which did not respond to the treatment with a particular brand of serum did respond when another brand was tried. The potency of the first brand was sufficient but was not effective against the particular strain of meningococci causing that epidemic.

*Erysipelas:* After having been on the market for several years erysipelas antitoxin has been recognized as being of proven value, especially when used in conjunction with transfusion. The full therapeutic dose of 20 cc. or 1,000,000 skin test units is necessary in the very young. In those less than three months old, a second dose of half the amount should be given twelve hours later. In cases of erysipelas of the new-born the antitoxin and transfusion should be used very promptly.

#### CONCLUSIONS

Certain evidence has been presented to show a progress in pediatrics:

1. In the simplification of infant feeding.
2. In the recognition of the part that

parenteral influences play in disorders of the digestive tract.

3. In the recognition of the value of vitamin D in the prevention and cure of dental caries.

4. In the recognition of the enormous power that we have in preventing or modifying certain of the infectious diseases by the use of small amounts of immune human blood during the period of incubation.

5. In the recognition of the value of commercial antitoxins as specifics in scarlet fever and erysipelas.

#### DISCUSSION

*Dr. D. T. McCall, Mobile*—Mr. President, a discussion of the paper to which we have just listened could be only a recapitulation of facts which have been fully and most interestingly adduced by the leader.

The question of progress in all problems of infancy and childhood is recognized as of national importance and is quite apropos of the day, as was indicated by the recent White House Conference on Child Health and Protection. Into this conference were called the leading pediatricists of our nation, so that the best measures could be evolved for the protection of childhood.

The paper expresses most especially the progress made in the prophylaxis, diagnosis, and treatment of some of the exanthemata, particularly scarlet fever, and measles. The work of Dick & Dick on scarlet fever, while not accepted in toto, yet affords a most interesting basis for discussion. The recent progress made in the prophylaxis and treatment of measles shows more reliable conclusions. The transfusion of blood from children convalescent from this disease or, when this is not available, the transfusion of the blood of the parent who has had measles, is giving most gratifying results in its prophylaxis and in its treatment.

As to the progress in infant feeding, this is most questionable. Especially for the last decade it seems that the pendulum has been still, or probably swinging backward towards the old method of simple dilutions of milk with the addition of sugar, which was in vogue over a score of years ago. I would even mention, with some trepidation, the approval now being given to the use of condensed milk, which was regarded, only a few years ago, as almost criminal. To its use have been ascribed innumerable ills of infancy and childhood, such as rickets, scurvy, slow development, low resistance, proneness to convulsions, etc. Investigations now going on, in a degree, refute such conclusions. For instance, the Pediatric Department of the New York Post Graduate Medical School and Hospital of Columbia University in "A Critical Clinical Study of Infant Foods" published in Archives of Pediatrics, gives its approval to the use of sweetened condensed milk as a form of infant feeding. This article cites interesting and favorable experiments of Dr. Joseph Brenneman of the Children's Memorial Hospital of Chicago on this question. This tendency towards high sugars is further



evinced at the present time by the use of high percentages of carbohydrates, such as Schick's Dubo with seventeen per cent sugar. While I am not advocating or endorsing condensed milk as altogether a suitable infant food, yet I am not so prejudiced as to say that it has no place at all in the feeding of infants, especially in view of the research work of eminent, medical authorities whose advice we, of small opportunity for investigation, should acknowledge.

The leader's paper shows in a concise way his pursuit of the excellent research work and progress recently done in the field of pediatrics. We hope this work will result in substantial, definite determinations.

*Dr. A. A. Walker, Birmingham*—The essayist has very thoroughly covered the advances made in pediatrics in the last few years, and now it remains for us to put this increased knowledge into practice. No one can deny that the mortality of infants and young children has been enormously decreased within recent years, and the credit for this decrease is due to two factors, namely, the development of pediatrics as a specialty, and the ever increasing effectiveness of health departments in safeguarding food and water supplies and in the application of preventive measures.

It is also true that infant and child mortality can be much further reduced if the already known and proven facts of simplified feeding and preventive measures were put into practice by the profession as a whole. This applies especially to the general practitioner in the smaller communities.

The use of immune human serum in the prevention of the acute contagious diseases has possibilities for good which can scarcely be realized. From what we already know of its effectiveness in the prevention of measles, there is reason to believe that it should be equally effective in the prevention of other acute infections which develop permanent immunity after an attack. If this one item of information alone was put with general practice many lives would be saved.

*Dr. W. W. Harper, Selma*—I would like for Dr. Lamar, in closing, to tell us how long the immunity exists in the donor.

*Dr. Lamar (closing)*—I think that Dr. Harper's question is the only one that requires any discussion. The immunity which can be acquired persists through life. In that connection, Dr. Walker brought out that this method of immunizing a child against a particular disease may be extended. I mentioned it in regard to whooping cough although adults may have whooping cough a second time. There seems to be great possibilities in the use of parent's blood. Of course, we have gotten wonderful results in the prophylaxis of measles because we often know when the exposure has occurred and the incubation period is quite definite.

The Sixty-Fifth Consecutive Annual Session of the Association will convene in Mobile, April 19-22, 1932.

## SCREENING AS A WEAPON AGAINST MALARIA\*

D. G. GILL, M. D.  
Montgomery

The control of malaria in any large area demands the utilization of all methods of attack. Primary methods of control, such as drainage of all breeding areas or the use of larvicides where drainage is not possible, are the methods of choice because they are aimed at the elimination of the malaria vector. They should be employed where economically feasible.

Malaria, however, by its very nature is a disease of rural areas and is likely to be the largest problem amongst the population least able to bear the financial burden of extensive drainage. A small breeding area can, of course, be eliminated but if the area is large and the population affected small or if there are many breeding areas some other means of control must be adopted.

Any method which will tend to break the chain of infection from case to mosquito and back to new infection will lessen the incidence of malaria. In the Southeastern United States, screening, or rather mosquito-proofing of homes, has been shown to be probably the most practical and most efficient of the secondary measures. To be effective, of course, the screening must be thorough. There is little use putting a screen over doors and windows and leaving openings elsewhere that allow the entrance of mosquitoes. Every crack and opening must be covered or filled.

Not every home is possible of mosquito-proofing but the vast majority of rural homes can be adequately protected. Even in the most dilapidated of buildings there are probably one or two rooms that can be converted into a haven of safety for the family to sleep.

The Alabama State Board of Health believes that screening offers one of the most feasible methods of attack on the whole problem of malaria within the State and is sponsoring a state-wide screening program. Malaria is, of course, more prevalent in certain counties than in others, so the initial effort is being directed to those counties having the greatest incidence and showing the highest death rate. All these

\*Read before the Association in annual session, Birmingham, April 23, 1931.

\*From the State Department of Health.

county health departments have a diversified program which must be carried out and it has been necessary to provide some additional personnel to assist with the anti-malaria work. Last year trained men were sent to three counties in the State to devote their whole time to the inauguration of a screening program. This year, through funds obtained from the drought-relief appropriations of the Federal Government, six additional men will be available. Special training is also being provided for some of the inspectors in counties having a problem.

Any screening program will of necessity need to be continued over a period of years but it offers hope of ultimate success. Malaria is a challenge to the future development of the State and must be met by every means at our command. The medical profession can do much in offering leadership and sponsoring this program in every county.

#### DISCUSSION

*Dr. W. A. Stanley, Enterprise*—I am sure we all appreciate this excellent paper and the presentation of the reel which demonstrates mosquito-proofing as it is being carried out by the malaria experts of the State Board of Health. I agree with Dr. Gill that the control of malaria demands the use of all methods of attack, namely,

1. Getting rid of anopheles mosquitoes,
2. Preventing access of mosquitoes to well persons,
3. Preventing the infection of these mosquitoes, and
4. Immunizing people against malaria.

Screening or mosquito-proofing, which comes under the second general method of control, then, would seem to be the most practical method for use in our general program. We know that malaria is transmitted only by the female anopheles mosquito, who is very quiet and reserved in her habits. She goes about stealthily, preferably after dark, remaining in some secluded, shady place during the daytime. Therefore, the need of protecting our people from them after dark and during sleep is apparent.

As stated by Dr. Gill, mosquito-proofing, to be effective, must be thorough since unprotected openings would simply mean trapping them in the house where they would seek some closet or dark place during the day and very quietly pass around and bite the inmates at night.

The solution of the problem, then, is education, as most of our public health problems are. We must educate our people to the need of protection and to the necessity of proper care of screens, paper, etc., used in mosquito-proofing, after it has been installed. With the assistance of the medical profession, I am quite sure that in a few years, we will be able to note the good results from this

program in the lowered incidence and death rate from malaria.

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**Cancer of the Uterus**—The fact that one woman out of twenty-seven dies from cancer of the uterus does not seem to have permeated the minds of the general practitioner and of the people. Once this fact strikes home in both classes, the prevalence of cancer of the uterus is going to diminish. A proper understanding of the predisposing causes of cancer of the cervix should be in the mind of every attending obstetrician. With this thought in mind when making a delivery, no woman will be allowed to approach the meridian of her existence with a cervix that has been damaged in childbirth.

The part that irritation and inflammation play in the origin of cancer has always been to me a most significant and interesting biological study. This is especially true when we remember that cancer of the uterus is comparatively rare in the woman who has never borne children or who has never had a traumatized or inflamed cervix. While it is true that cancer does occur in that type of cervix, it is extremely rare and has no special significance as to the origin of the disease.

I am satisfied in my own mind that inflammatory conditions in the cervix are the most common cause for the gradual transition of the normal epithelial cell into that of malignancy. The clinical evidences of this condition are so outstanding that one needs only to look to be convinced. There can be no question of the well established scientific fact that irritation and inflammation are important factors in the etiology of cancer. Just when the epithelial cell undergoes this transition is not known. There must be, however, a period when this change takes place. We all have seen the apparently malignant cervix, which, when a biopsy was made, showed no changes which could be definitely classed as malignant. This is the precancerous stage, and if properly recognized and treated would practically eliminate 75 per cent of cancers of the uterus. It is certainly true in the clinical picture of these patients where the condition is neither normal nor malignant. Just exactly how wide is the space between a malignant and nonmalignant condition is for science to discover. It requires no stretch of our clinical imagination for one to understand how the bruised, wounded, and lacerated cervix, which is constantly bathed in the acid secretion of the vagina, rapidly becomes inflamed. The length of time that it takes cancer to develop in this type of cervix depends to a great extent upon the natural inborn immunity of the individual.

We must realize that the chemical reaction of the vagina is acid and that the field is contaminated, while that of the interior of the uterus is sterile and alkaline. The vagina always, of course, contains large numbers of pathogenic bacteria. The epithelial cells lining the cervix normally live in a sterile and alkaline medium. When the integrity of the cervical mucosa is broken with eversion of the deeper structures into the vagina, a favorable condition is produced for the development of a precancerous lesion.—Gilbert, W. H.: *California and Western Med.*, October 1931.



# THE JOURNAL

of

The Medical Association of the State of Alabama

and of

The State Board of Health

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November 1931

## AN ECHO

President Gaines in a message to the Association, appearing in the initial number of the Journal, said: "The establishment of an official organ . . . will doubtless mark the inception of a new epoch in the history of medical progress in Alabama.

"Designed to disseminate among the profession not only the deliberations of the annual state meeting, the contributions from the county societies and from the district meetings but also the many activities of the State Board of Health, it should prove profitable . . . in giving an impetus to the individual physician to record and report his work."

The Committee of Publication is happy to record that already county society and district meetings have furnished eminently worth while contributions for the columns of the Journal. These contributions will appear in due course to make the publication still further part and parcel of the life of the Association.

## FOUNTAIN OF YOUTH

In "Black Oxen", Gertrude Atherton described the life of a beautiful woman rejuvenated by x-radiation, presumably of her ovaries. Steinach, Voronoff, Schmidt, Lichtenberg, Haire, and others in the past fifteen years have recorded many human and animal experiments which they believed induced a return of the characteristics of youth in senile animals and men. An operation ligating the seminal vesicles,

and also testicle transplantations, were claimed to restore the youthful vigor of aged subjects.<sup>1</sup> Most workers have failed to confirm the rejuvenating effects of vasoligation, and have reported that testicular grafts do not survive long enough to have any physiological effects. None of these measures has so far, apparently, attained the desired end.

An internal secretion of the ovary has been known for several years, which in minute quantities induces estrus, or heat, in spayed and in immature animals. A secretion of the anterior lobe of the pituitary gland induces it in immature animals but not in castrates. Each of these secretions is inactive in the absence of the other. Pituitary and ovary are interdependent in the sexual reaction in both male and female animals.

The studies and standardization of these internal secretions were made first upon young animals. Their effects upon aged rats have also been observed. Junkmann<sup>2</sup> reported that after long continued (several months) injection of follicular ovarian hormone, the estrus-inducing hormone, into senile female rats, the animals initiated a spontaneous periodic estrus without further treatment. They also exhibited smooth, sleek, dark, coats of hair and greater agility and activity. The sexual clock seemed to be rewound, and to continue for another period of itself.

Hoffman<sup>3</sup>, of Jefferson Medical College, reports that following transplants of anterior pituitary lobe tissue into senile female rats, estrus was induced within a few days, to continue for several months, long after the graft had become absorbed. One senile rat of his series became pregnant. The pituitary transplant seemed again to start a cycle which could continue of itself.

Ovary and pituitary, it was remarked above, are interdependent. Hence, if the above experiments are confirmed, the senile pituitary is capable of reactivation by fresh ovarian injections; and the senile ovary is capable of reactivation to the point

1. Steinach Operation for Rejuvenation. Ed. Sou. Med. Jour. 18:224, 1925.

2. Schoeller, W.: Dohrn, Max; and Hohlung, W.: Amer. Jour. Med. Sci., 182:326. Sept. 1931.

3. Hoffman, Jacob: Effect of Anterior Hypophyseal Implants upon Senile Ovaries of Mice. Amer. Jour. Obst. and Gyn., 22:231, Aug. 1931.

of producing ova, by a fresh pituitary transplant. Both pituitaries and ovaries of the old animals, therefore, though quiescent, are capable of restoration to normality.

These studies throw light at least upon what is not the origin of senescence. Though either of these glands may serve temporarily to reverse the process, aging is not directly dependent upon failure of ovary or anterior pituitary. It is more probably dependent upon a failure of adequate stimulation of these from another source.

It is also to be expected that the process is much more complicated in human beings than in rats, and that clinical hopes need not yet be aroused. If this generation lives long enough, however, it may yet see a therapeutic prolongation of its period of youth.

M. Y. D.

E. B. D.

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#### THE NATURE OF EXOPHTHALMIC GOITER

The clinical manifestations of thyroid disease are well understood, diagnosis is relatively easy, and treatment is fully standardized; but the ultimate nature of these disorders is obscure, and opinion is divided. Much of this discussion concerns the nature of the profound physiologic disturbance exhibited in exophthalmic goitre. Is this solely a disease of the thyroid gland, or is it due to some more remote disorder of which increased thyroid activity is merely one manifestation? The first of these views is held by many clinicians who believe that some unknown stimulus causes a rapid hyperplasia of the gland resulting in an increased output of thyroxin, and that the physiologic disturbances thus engendered produce the clinical picture known as Graves' disease. This view has recently found support in the careful pathologic studies of Rienhoff<sup>1</sup>, and is well summarized by him in the following conclusion: "All the known and concrete facts now at our disposal point to the thyroid as the primary and sole site of the disturbance and, so far as our present knowl-

edge goes, the cause of the disease". An entirely different conception of Graves' disease is held by a number of other equally observant clinicians who believe that the ultimate causative factor is a depression of tissue oxidation, which increases the demand for thyroxin, and that this, in turn, produces hypertrophy of the gland.

Many physicians, visualizing the almost endless variety of clinical combinations exhibited in this disorder, see in it "one common denominator, a neuropathic personality". Persons of this type are temperamental, sensitive and emotionally unstable; they are lacking in stamina and when subjected to strain go quickly to pieces. In one patient is seen all the evidences of Graves' disease without the hyperthyroidism, and in another marked hyperthyroidism with but little evidence of Graves' disease. Such clinical combinations are almost endless but scrutiny of the patient himself, his demeanor, his facial expression and particularly his reaction to the vicissitudes of life, will reveal almost invariably the same emotional instability, the same neuropathic personality. The fully developed picture of Graves' disease comes first into view when, as the result perhaps of some psychic insult or other shock, the thyroid undergoes hyperplasia and increases its output of thyroxin. The person experiencing this change suddenly becomes more temperamental, loses weight, develops a persistency of his tremor and tachycardia and then exhibits enlargement of the thyroid with exophthalmus. By this addition to the picture of thyroid enlargement and exophthalmus its lines are accentuated and Graves' disease then becomes recognizable. Such a patient may be treated with iodine and rest or with operation, and experience a graphic slowing down in his pulse rate and in the tempo of his physiologic processes, but his personality remains. Scratch the surface ever so lightly and the same appearances again come into view. What is the meaning of this? Largely that these patients are born, seldom made, and that the development of Graves' disease rests upon a constitutional substratum of a characteristic and distinctly abnormal type.

The nature of this constitutional peculiarity was interpreted by Warthin upon

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1. Rienhoff, W. F. Jr.: A New Conception of some Morbid Changes Occurring in Diseases of the Thyroid Gland. *Medicine*, 10, 257, Sept. 1931.



an anatomic basis. This brilliant pathologist, who described this type of constitution with great accuracy and understanding, ascribed its peculiarities to a general thymico-lymphatic hyperplasia. Marine<sup>2</sup>, too, holds that an inherent feature of the Graves constitution is hyperplasia of the lymphoblastic tissues, as evidence of which he cites the characteristic tendency toward lymphocytosis. This author holds that Addison's disease, Graves' disease, and status lymphaticus are all closely akin, and that a fundamental factor related to all three is a deficiency of internal secretion of the supra-renal cortex and sex glands. Bauer, one of the earlier writers on constitutional predisposition, as well as many other students of this disease, seeks its explanation in an instability of the vegetative nervous system. Certain it is, most of the manifestations of this disease can be ascribed to autonomic imbalance. When we recall the profound dependence of the vegetative nervous system for its stability upon the functional integrity of the glands of internal secretion, it becomes easy to reconcile Bauer's theory with that of Marine and to assume that this instability of autonomic nervous control is related to a deficiency of function in the suprarenal cortex and sex glands. This last view is well summarized by Moschowitz<sup>3</sup> in his conclusion that, "despite the fact that many of the signs of Graves' disease appear to be the effects of hyperthyroidism, the gland itself is not the primary cause, and the changes that occur in the gland are the resultant factors". It should be added that the views just advanced as to the nature of Graves' disease are not in conflict with the generally accepted methods of treatment. This is well put by Marine when he writes that in selected cases the best available treatment, at present, is a well-appointed partial thyroidectomy, but that when the etiology of this disease is fully understood a more rational treatment will no doubt be worked out.

J. S. McL.

2. Marine, David: Studies on the Etiology of Goiter Including Graves' Disease. *Am. Int. Med.* 4, 423, Nov. 1930.

Remarks on the Pathology of Graves' Disease. *Amer. Jour. Med. Sc.* 180, 767—Dec. 1930.

3. Moschowitz, Eli: The Nature of Graves' Disease. *Archiv. Int. Med.* 46, 610, Oct. 1930.

## A LICENSE EXEMPTION OF INTEREST TO THE PROFESSION

An Act of the recent Legislature (S. 40), approved by the Governor March 9, 1931, exempts from payment of occupational taxes disabled veterans of the World and Spanish-American Wars. In brief the law provides "that any bona fide permanent resident elector of the State of Alabama, who served as an officer or enlisted man in the United States Army, Navy or Marine Corps during the World War between April 6th, 1917, and November 11th, 1918, or in the Spanish-American War between April 21st, 1896, and July 4th, 1902, and who was honorably discharged from the service of the United States, and who at the time of his application for license as hereinafter mentioned shall be disabled from performing manual labor, shall upon sufficient identification and proof of being a permanent resident elector in the state and production of an honorable discharge from the service of the United States during the World War or Spanish-American War be granted a license to engage in any business or occupation in the State of Alabama which may be carried on mainly through the personal efforts of the licensee, and as a means of livelihood, and shall not be required to pay any license tax otherwise provided for by law, whether State, County or Municipal."

The Act further provides that it "shall be the duty of each and every license collecting authority of this State, or municipality thereof to issue without charge to such persons as may be entitled to license hereunder a license to engage in any business or occupation which may be carried on mainly through the efforts of the licensee and which is used by him as a means of livelihood . . . which license shall be issued without charge, fee or other prerequisite of any kind, except proof duly made that the applicant is entitled to credit and intent of this law to receive the exemption herein provided for, which proof may be made by exhibiting a certificate of disability of 10% or more."

The Editor expresses the hope that this information may be helpful to those members of the Association to whom it may be of concern.

## Current Comment

### WELCOME TO ALABAMA

(*Journal, A. M. A., Oct. 17, 1931*)

Beginning with July 1931, the Medical Association of the State of Alabama and the State Board of Health have co-operated in the issuing of a journal of the two organizations, this periodical to be owned and published jointly each month by these two agents. The periodical makes a right start by becoming a member of the Co-operative Medical Advertising Bureau, in which practically all of the state medical journals are associated. Such periodicals as are associated in the bureau limit their advertising of drugs to products passed on and accepted by the Council on Pharmacy and Chemistry of the American Medical Association. The first issue of the *Journal of the Medical Association of the State of Alabama and of the State Board of Health* includes the president's address; two articles on scientific subjects; editorials; proceedings of the association, since the magazine replaces the previously published transactions; also a department of public health, of county society news, book abstracts and reviews. It is a well organized publication, apparently carefully edited, and it deserves therefore a special welcome as a useful addition to the group of state medical publications.

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### THE NEW ALABAMA STATE JOURNAL

(*Southern Medical Journal, October 1931*)

In July of this year appeared the maiden number of the *Journal of the Medical Association of the State of Alabama and of the State Board of Health*, containing the address of the former President of the State Medical Association, Dr. W. G. Harrison, and other excellent papers read during an unusually well prepared program at the last State meeting. The first number is most creditably gotten up, from a mechanical and scientific standpoint, is well worthy of attention, and will be enjoyed by those outside the State.

The editors of the new journal are the efficient and energetic State Health Officer of Alabama, Dr. J. Norment Baker, and Dr.

Douglas L. Cannon, who is Secretary of the State Medical Association. Co-operating with Dr. Baker and Dr. Cannon in the Publications Committee are Dr. Fred W. Wilkerson, Chairman, of Montgomery, Dr. W. W. Harper, of Selma, and Dr. J. S. Mc-Lester, of Birmingham, men whose names have long stood out in the annals of curative medicine and of medical progress in general in Alabama. The combination of the two overlapping agencies, the State Department of Public Health and the State Medical Association, is a fortunate one for the public and the profession.

One learns medicine by reading and writing it. The Southern Medical Journal welcomes this new member into the family of state medical journals of the South, and rejoices in its initiation as further evidence of the activity of the progressive spirit which is daily more and more alive in the South.

May the new journal have many subsequent issues of equal merit!

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### A NEW STATE MEDICAL JOURNAL

(*New England Journal of Medicine, Oct. 1, 1931*)

It is always a pleasure to welcome a newcomer to the ranks of the State Medical Journals. We have recently received the first number of the first volume of the new Journal of the Medical Association of the State of Alabama, the official organ of the Alabama State Medical Society and of the Alabama State Board of Health. This first issue contains the Annual Address of the President of the Association at its meeting in April, the Annual Jerome Cochran Lecture on Pathology of Tuberculosis and Syphilis, and a particularly interesting article by Dr. Weil of Montgomery on the Plants Causing Hay-Fever in Alabama. This last paper is accompanied by a Pollen Calendar for the State ranging from the Alder in January to the Giant Ragweed in September and October. The remainder of the issue includes editorials and miscellanea, especially the Annual Report of the Alabama State Board of Censors.

We congratulate the Editor on the attractive appearance of this first number of the new Alabama State Medical Journal for which we are glad to prognosticate a creditable and successful career of service

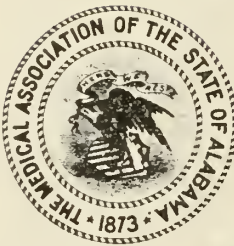




M. B. CAMERON, Eutaw  
1903-1904



B. B. SIMMS, Talladega  
1914-1915



J. S. McLESTER, Birmingham  
1919-1920



C. A. MOHR, Mobile  
1925-1926

CAT.

PAST PRESIDENTS OF THE ASSOCIATION

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### SOME PROBLEMS FACING THE DOCTORS OF ALABAMA\*

JERRE WATSON, M. D.  
Anniston, Alabama

The mere existence of organizations implies the presence of problems. This is particularly true of medical organizations, for medical men must face many situations that try their mettle; they must solve many vexing problems.

The true medical man must ever be anxious to advance in the science and art of his profession. He must, with the truly scientific mind, desire to find the truth that leads to broader knowledge and greater achievement. So medical organization in this state is concerned with problems of scientific study. Doctors must help one another to understand the newer methods of diagnosis and treatment, for herein lies the approach to efficient public service.

Since funds are necessary to advance knowledge and skill, the physician must give attention to matters that bring greater income—that promote economic growth. It is proper that medical men in associating with one another should exchange ideas that favor greater prosperity. Yet this prosperity should not be sought as a solely selfish object, for it makes possible better physicians capable of rendering more efficient service to the supporting and suffering public.

Any organization torn by strife, jealousy and selfishness is handicapped. All members of any group of men should desire to understand and co-operate with others of the same group. This fosters fellowship, promotes good-will and broadens the individual horizon.

The medical profession will be handicapped if its members bite and devour one another. It will be strengthened when physicians uniformly fortify and support

one another. The real solution of the problem of co-operation demands the realization that the individual is helped most by helping the group, but no doctor has begun the solution of this problem till he eliminates from his own thoughts the spirit of jealousy and narrow selfishness.

"The strength of the wolf is the pack".

The aforementioned problems have dealt with the relations of the members of the profession with one another. There are also problems equally as intricate and more openly belligerent that arise from assaults made by other groups whose interests are in conflict with our own. To meet successfully the issues raised by such interests it seems that every physician must be made to realize that

"The strength of the *pack* is the *wolf*".

Chiropractors, osteopaths, diet cranks, physical culture faddists and all the unholy issue of single-track brains exhaust all their own cunning and employ skilful lobbyists and manipulators of legislation and molders of public opinion in an effort to destroy the influence of the medical profession. To meet the concerted onslaught of the cults it behooves every physician to realize his own duty to contribute to the strength of the group. Legislation must be watched, public opinion must be cultivated and efficient broad-gauge and double-track service must be rendered by every practitioner.

There are also certain principles which are inimical to the interests of the profession. Undemocratic ideals are un-American because they savor of monarchy. In all the history of the world there has not been a monarchical system that did not elevate the few and oppose the many. There are among us in positions of prominence those who would foster monarchical principles and in doing so they demonstrate their lack of faith in the rank and file of the profession. One is led to wonder upon what meat they have fed that they are grown so much greater than their fellows. Are not

\*Read at the meeting of the Northeastern Division of the Association, Guntersville, September 9, 1931.

\*Received for publication Oct. 13, 1931.



their fellows at least their equals in education, in attainment, in judgment, in loyalty and in patriotism? They arrogate to themselves the wisdom and virtue of the profession and denounce as "radical" all who dare to differ from them or to question the infallibility of their leadership and they base their argument on the "sacredness of our Constitution" and the plea that we who live now must not disturb the "spirits" of the dead leaders who gave us a great public health system.

It is only through the courage of men who dared to be called "radicals" that the "sacred document" was amended so that every member of the State Association would be eligible to election as President. The "spirits" of our deceased leaders were not so perturbed over that change as to haunt the lives of those who led in freeing the Constitution of one undemocratic and unfair provision. Why then should we fear to open the door of every office in the Association to every member of it? Why should we be told by an evident candidate for the Board of Censors that we must not dare to tamper again with the Constitution?

As evidence that the gentleman referred to is a candidate for the State Board of Censors, the following extracts are taken from an article of his published in the "Association Forum" of a recent issue of the State Association Journal.

Under his name appears the title, "Life Counsellor of the Medical Association of the State of Alabama". In an early part of said article this paragraph is found:

"A service of many years as Secretary of this Association, in close affiliation with Dr. Sanders, a recognized authority on medical organization; subsequently as President; and later, as a member of the State Board of Censors for a number of years—such unbroken and varied service extending over a period of well-nigh thirty years is the motive which prompts the following reflections".

In the next paragraph there occurs this statement in opposing amendment to the Constitution:

"It can hardly be justly charged that he is pleading the cause of his own candidacy in this regard; it so happens that

this Association has bestowed upon him, unsought, all the honors within its gift, including the present one of State Health Officer".

Such self-laudatory statements can hardly be mistaken. A man cannot plead a thing that does not exist. The gentleman makes specific reference to pleading *his own candidacy*. These statements of his concerning his own special fitness for the office are almost immediately followed by the further statement "that an understanding grasp" of our Constitution "can be had only through reflective study and intimate contact, and which contact is not usually afforded the average member".

Such statements are a definite profession of fitness and seem tantamount to open avowal of candidacy. Such tactics are common among those seeking political preferment.

The outstanding plea made in the aforementioned article is that the "sacred" Constitution of this Association shall not be changed.

What direct provision of the Constitution have we proposed to alter? None. Not a single one. We have merely proposed to add a provision not before contained in our basic law. Not an alteration, but an addition. We want to make our splendid Constitution more definite.

The amendment that has been submitted provides that the State Health Officer shall not during his term of office be permitted to be a member of the State Board of Censors. This amendment was suggested by the President of the Association in his annual message at our last meeting. I permitted it to be submitted over my name because I believe in the principles it typifies. It was approved by the State Board of Censors. It passed the first reading at the final session of the Association without a negative vote. Such definite and general endorsement shows that this amendment has been carefully and deliberately planned. It now behooves the doctors, the rank and file of the profession, you and I, to see that it becomes a part of our fundamental law at its final reading next April. We want to separate our executive and judicial bodies. We want to prevent our chief executive from being a member of our supreme court.

The gentleman in his article stated that one cannot but wonder why I did not state the reasons for proposing this added limitation to our Constitution. In order to satisfy the gentleman's curiosity in this regard and to present these reasons clearly to the readers of the Journal, I wish to quote with my approval the six reasons assigned by the State Board of Censors in their endorsement of this proposed amendment. They are as follows:

"(1.) A health officer is elected primarily for his services in administering the Department of Health and in conserving public health. He is elected as a full-time man and should not divide that time with any extraneous duties.

"(2.) Membership upon the State Board of Censors calls for a ruling on many controversial points in no wise related to public health that arise in all parts of the State. Taking sides year by year in bitter controversy necessarily builds up a host of enemies which makes a united profession back of the State Health Officer and his department an impossibility. A health officer should be elected as a health officer and not a politician. The less politics dragged into public health the better it will be for all citizens of the State.

"(3.) The State Health Officer is elected by the State Board of Censors, and is responsible to the Board for all his acts, which are periodically reviewed by the Board, which in turn accepts or criticizes his work. It is certainly not in keeping with any form of democratic government to create a situation where one may at any time be called upon to serve in the triple capacity of judge, jury and accused.

"(4.) The President would seem right in the reason he assigns why the State Health Officers in the past have been permitted to become members of the Board, namely, that Cochran, being the founder of the Association, was obliged to direct the Board in order to launch his plan successfully, and explain it to the profession. This need no longer exists, as the Association has passed the stage where it requires the perpetuation of any undemocratic custom.

"(5.) The present would seem an ideal occasion for correcting this error, since the State Health Officer is neither a member of, nor a candidate for membership on the Board. The Board, which has nothing but praise to offer for the splendid work of its State Health Officer and which is in thorough harmony with all his public health policies, feels certain that this stand will lessen the difficulties of his position and increase his efficiency.

"(6.) Recent information obtained from the American Medical Association is that an increasingly smaller number of state boards of health (now less than seven in the United States) have the State Health Officer as a member".

In the face of such definite, clearly enunciated reasons for the adoption of this amendment only one prominent member of the profession has made public protest against it. The spirit of it is already contained in the fundamental law of our nation—it has already been tried for more than a century and found safe and sound. The only man to voice publicly such a protest has been the one who knows assuredly that he will be deprived of the privilege of holding two offices at the same time instead of one; the one who knows that he would be unable to further increase his already great power or to sit in judgment on his own acts.

So we find that problems arise from within our own ranks and as a result of our own system. May the doctors of Alabama think clearly and act wisely in the solving of such problems. May they never surrender their own privileges nor sacrifice their own independence. Our plea is for Alabama doctors to stand upon American principles and our prayer that progress may know no failure and achievement have no bounds.

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#### A CORRECTION

Line 40 in the second column on page 173 of the October issue should be deleted. A substitution therefor will then make the sentence read:

Such limitation is that characterizing the standing committees of almost all other medical organizations.



## DEPARTMENT OF PUBLIC HEALTH

## BUREAU OF ADMINISTRATION

J. N. Baker, M. D.  
State Health Officer in Charge

THE DEVELOPMENT AND GROWTH OF  
HEALTH ORGANIZATION AND WORK  
IN ALABAMA

The year 1914—17 years ago—witnessed the birth, in Walker County, of Alabama's first full-time county health department, the second in the United States. In 1914, therefore, only 1½% of the State's total population was protected by full-time health unit service. At this time the appropriation by the State for all public health work was \$25,000. In this year, too, we find the State Board of Censors and State Health Officer announcing the fact that the time had fully arrived for the organized profession to urge upon appropriating bodies the great need and value of full-time health officer service and pleading for a campaign of education in every county in the State looking to this end. The Board said, "If this campaign be launched, it will be the broadest and most unique of its kind ever carried on anywhere". The personnel of the central staff, in this year, was composed of 12 persons—2 in Administration; 3 in Vital and Mortuary Statistics; 2 in the Hookworm Commission and 5 in the Laboratory and Pasteur Institute. It is interesting to note that at this stage of development, nearly one-half of the entire personnel of the central staff was concentrated in the laboratory. The Board and State Health Officer at that time seemed to sense the acute need for laboratory service for the physicians of this State, and made heroic effort to supply this demand.

In 1916, fifteen years ago, we glimpse the first gropings in sanitation in Alabama, made in Walker County through aid rendered by the United States Public Health Service and a fervent appeal being made by the Board to the State Medical Association that it give all possible aid to the furtherance of this work in the various counties. During the two succeeding years—1915 and 1916—two more full-time coun-

ty health units were added, the State's appropriation remaining the same through 1918—\$25,000.

The year 1917—just 14 years ago—may be said to mark the real turning-point in the development and growth of public health work in this State; during this year three new county units were added and the leadership in this work passed from the hands of the lamented Dr. Sanders to his successor, Dr. Welch. It was also about this time that the legislature, realizing the vast potentialities for good in our scheme of organization for expanding this work, saw fit to increase the appropriation for public health work. But for this foresight and liberality on the part of the legislature, it would not have been possible to have advanced to our present high state of efficiency in county organization.

During this ten-year period, that is, between 1917 and 1927, our county organization expanded from 3 to 33 and the personnel of the central office mounted from 12 in 1914 to 55 in 1927. During this period, also we witness the creation of a minimum number of bureaus within the department to meet the expanding needs. It was during this growing, formative stage that the Rockefeller Foundation and the United States Public Health Service, appreciating the soundness and strength of our public health organization, donated so liberally, both in money and in personnel, to the rapid building up of what they then considered and what the world now concedes, is one of the finest pieces of health machinery in existence. So liberal were these agencies to Alabama that her health department was frequently referred to as "The Branch Office of the United States Public Health Service and the Rockefeller Foundation".

This fact, however, must be borne in mind: These aids were but temporary; and those activities into which these extraneous monies were poured, if continued, had to be cared for at the State's expense. To illustrate: Beginning in 1922, through the Sheppard-Towner Act, Alabama received *annually* from federal sources \$25,-

836 to be expended for rural health nursing. This activity proved of such great worth and so necessary, that, upon the discontinuance of this federal subsidy in 1929, this financial burden became the responsibility of this department. In the eyes of these various agencies, whose efforts are aimed primarily at setting health departments on their own feet, Alabama is viewed as, long since, having passed the crawling stage in public health work and as being a lusty sprinter; and, consequently, they have passed on to other and more immature fields.

Since 1927, our county health units have grown from 33 to 54; which represents nearly 90% of the State's population covered by this type of health service.

The machinery for doing public health work is all comparatively new and much of the personnel is raw and not yet fully trained. One cannot set up a health unit, launch it in a county and expect it to forthwith sprint, let alone crawl. Constant guidance, supervision and advice are needed to keep their activities in proper channels and off the rocks. In short, we, of the central staff, are striving to accomplish in the various health units, through the numerous activities conducted by us, a building-up process looking to efficiency and progress, just as the United States Public Health Service and other agencies sought to procure stabilization and soundness of methods for our state organization. Consequently, one of the major problems in administration is that of increasing the output of efficiency of public health work in each of our organized units. This we are striving to do through the efforts of our "Integrating Units", the manner of whose function has already been explained.

During this period of 17 years of vigorous activity on the part of our health department, Alabama has been visited by no state-wide epidemic. Within the past 14 years the death rate from typhoid fever has dropped from 42 to 7.9 in 1930; enteritis from 68 to 31; malaria from 22.5 to 11.9; pellagra from 46.8 to 23.6; tuberculosis from 131.8 to 84.3; diphtheria from 8.1 to 6.9. Hookworm disease formerly so devastating to Alabama's efficiency is no longer, save in a few counties, considered a major problem.

These things have not "just happened"; they represent tireless, indefatigable effort on the part of your health department. While some of our results are not all that could be desired, still they should be encouraging to all as they are to the State Health Officer and his staff.

An analysis of certain major expenditures by the State during the fiscal year 1929-1930 reveals the following:

For Highways .....	30.77%
For Education .....	26.92%
For Penal Institutions.....	12.12%
For Health .....	1.5%

From these figures the reader may draw his own deductions. The comparison is not made to disparage other activities of the State government but to show what a comparatively small part of the revenues of Alabama is used to protect the health of the people—less than 25 cents per capita.

## BUREAU OF LABORATORIES

L. C. Havens, M. D., Director

### THE WIDAL REACTION VS. BLOOD CULTURE FOR THE DIAGNOSIS OF TYPHOID FEVER

Contributed by  
Catherine R. Mayfield, M. S.  
Assistant Director

The Widal reaction, one of the first laboratory aids proposed in the diagnosis of disease, still holds, after almost 35 years, an important place among diagnostic tests. Considerable dependence is placed on it, in spite of increasing experience with the pitfalls which attend the interpretation of results. It is common knowledge that the increasing use of typhoid vaccine has diminished the value of the test. Rosher and Fielden<sup>1</sup>, in 1922, examined 1,000 specimens of serum and found that 29 per cent were positive. These results were attributed to the effect of wholesale vaccination of army men during the World War. This explanation is strengthened by the findings of Smith, MacVie and Newbold<sup>2</sup>, who, in 1930, found 15 per cent of 302 serums positive. It is further evident that the Widal reaction, in regions of high typhoid prevalence, must be interpreted with caution. In

1. Rosher and Fielden: *Lancet*, 1922, I:1088.

2. Smith, MacVie and Newbold: *Jour. Hyg.*, 1930, 301:55.



this laboratory<sup>3</sup>, agglutination tests were made with the serums of 1,136 supposedly normal individuals with 14 per cent positive in the dilution of 1:40 or higher and 23 per cent in a dilution of 1:20. A history of a clinical attack of typhoid fever or of vaccination could be obtained in only 20 per cent of these cases, indicating, as one would expect, in view of the known prevalence of the disease, that subclinical infection is common.

In the light of these facts the question presents itself as to the practical value of the Widal reaction. In a locality where typhoid fever is known to be common, the result of a Widal reaction in the case of a particular individual must be interpreted with caution. The isolation of the organism from the blood of a patient is a definite diagnosis for typhoid fever. The cultural method also affords an earlier diagnosis of the disease.

All blood specimens received in this laboratory with a request for agglutination tests, regardless of the time of onset, are routinely cultured in brilliant green bile. The results of 1,034 specimens are presented in Table 1.

TABLE 1  
RESULTS OF WIDAL REACTIONS AND  
BLOOD CULTURES RECEIVED FOR  
AGGLUTINATION TESTS

Total Specimens Examined—1,034		
	Number	Per Cent
Positive Widal's	180	17
Positive Cultures	72	7

Relying solely on the Widal reaction for diagnosis one would naturally be led to believe that 180 specimens showed evidence of typhoid. As a matter of fact, however, positive cultures were obtained in 33 (20%) of the 180 positive Widal reactions. In this number, therefore, there was no question of the diagnosis of typhoid fever. Thirty-nine of the 72 positive cultures were negative with the Widal reaction. It is noteworthy that this number would have been reported negative had no cultures been made. If the Widal reaction is positive it must be remembered that one in every three or four normal persons will give a similar result; and that the one sure means of early diagnosis is blood culture.

3. Leon C. Havens and Catherine R. Mayfield; Southern Med. Journ. 1931 24:652.

BUREAU OF VITAL STATISTICS

W. T. Fales, Director  
Ethel Hawley, Acting Director

SOME COMPARATIVE FIGURES ON  
TUBERCULOSIS

In 1917 tuberculosis ranked second in order of importance as a cause of death in Alabama, being surpassed only by the respiratory diseases which included both influenza and pneumonia. In 1930 tuberculosis had dropped to fourth place.

In 1917 13 per cent of all colored deaths in the State were due to tuberculosis and 12 per cent of all white deaths. In 1930 the ratio had dropped to 10 per cent and 5 per cent respectively.

The reduction has been greatest among white females and least among colored males. The percentage of decrease is—white males 34 per cent, white females 43 per cent, colored males 26 per cent, and colored females 31 per cent.

It is quite significant that the greatest rate of reduction has been in the lower age groups, as will be seen from the accompanying table. (Table 1.) Two age groups

TABLE I  
Death Rates, per 100,000 Population, from Tuberculosis (all forms) Alabama, 1917-1930.

WHITE						
	Male			Female		
	1917	1930	Per cent Decrease 1917-1930	1917	1930	Per cent Decrease 1917-1930
All ages	72.3	47.5	34.3	89.2	50.8	43.0
Under 1 year	53.0	14.5	72.6	44.9	10.0	77.7
1-4 years	18.4	7.1	61.4	18.4	8.6	53.3
5-9 years	12.4	8.2	33.9	8.5	2.8	67.0
10-14 years	5.6	3.0	46.4	8.0	5.2	35.0
15-19 years	39.1	16.1	58.8	54.8	27.0	50.7
20-24 years	85.1	46.9	44.9	121.1	66.7	44.9
25-34 years	114.5	46.5	59.4	132.7	69.7	47.5
35-44 years	102.4	66.6	28.6	148.4	90.1	39.3
45-54 years	98.4	83.6	15.0	100.4	73.5	26.8
55-64 years	142.9	158.6	+11.0	131.7	104.7	42.4
65-74 years	362.7	236.9	34.7	417.7	194.2	46.0
75 and over	210.7	182.2	13.5	297.0	160.4	46.0
BLACK						
	1917	1930	25.8	230.2	158.3	31.2
All ages	197.0	146.2	25.8	230.2	158.3	31.2
Under 1 year	59.8	29.6	50.5	57.9	67.0	+15.7
1-4 years	56.3	41.3	26.6	63.7	18.2	71.4
5-9 years	33.3	8.4	74.8	26.7	15.3	42.7
10-14 years	41.4	27.3	34.0	77.7	44.1	43.2
15-19 years	166.5	123.0	26.1	260.0	186.0	29.5
20-24 years	401.4	256.1	36.2	449.5	294.4	34.5
25-34 years	360.6	267.9	25.7	409.9	297.3	27.5
35-44 years	343.6	313.9	8.5	324.5	227.4	29.9
45-54 years	223.4	164.6	26.3	242.6	186.7	23.0
55-64 years	274.7	170.7	37.9	167.1	105.4	36.9
65-74 years	239.6	174.6	27.1	196.6	118.5	39.7
75 and over	156.6	84.3	46.2	184.1	140.6	23.6

show an increase—white males 55-64 years, and colored females under one year. The higher rate for colored infants is probably due to accidental variation, as it has been less for previous years, but the rate for white males 55-64 years has been increasing more or less uniformly for several years.

Figures showing urban and rural rates for 1917 are not available so comparison can not be made, but a table (Table 2) showing the urban and rural rates for 1930

TABLE II

## PULMONARY TUBERCULOSIS, 1930

Resident Rate in Which Deaths are Allocated to Place of Residence. Rate per 100,000 Population

	Total		White		Black	
	No.	Rate	No.	Rate	No.	Rate
Total	2052	77.3	751	44.0	130	137.3
Total Urban	809	108.1	269	56.3	540	199.5
Cities under 10,000	279	172.0	132	110.5	147	207.7
Cities 10,000 and over	530	91.2	137	38.2	393	176.3
Rural	1243	65.2	482	39.2	761	112.5

is of interest. It will be seen that the rural rate for both white and colored is considerably less than the urban, being 30 per cent less for white and 44 per cent less for colored. A striking fact is the high rate in cities of less than 10,000 population. For whites the rate in cities of 10,000 or over is slightly less than the rural and 56 per cent less than the rate in the smaller cities. The colored rate for the larger cities is 57 per cent more than the rural, but 15 per cent less than for cities of less than 10,000.

This difference is probably due to poor housing conditions, coupled with lack of facilities for treatment in the smaller cities as contrasted with the larger.

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### A NEW VENTURE

Beginning with this issue of the Journal there is published a table as to the prevalence of the various communicable diseases in Alabama. It is recognized that these figures do not represent the true state of affairs in regard to many of the diseases, but they do show the general trend of incidence. Many cases do not seek medical at-

tention and of those that do call a physician a certain percentage are never reported to the health authorities. Far too often the first warning that a health department has of the presence of a dangerous disease is a death certificate and in many instances damage has already been done to the contacts of that case. It is impossible for any health department to control the spread of any disease without prompt knowledge of its occurrence.

A United States registration area, similar to the one for births and deaths, was formed this year for morbidity reporting. States conforming to the standard set were admitted but Alabama was not amongst those so honored. The records from all states in the death registration area were averaged and this grand average considered as the standard. To be admitted a state had to have reporting as good as the average throughout the country. On five diseases chosen as representative Alabama averaged only 63% of the standard. In only one disease was the reporting considered good and that was for typhoid fever. The other diseases varied from 22 to 74 per cent.

The system adopted for physicians' reporting in the State has been copied by a great many other states and was designed to cause the physicians as little trouble as possible. A weekly report on a card that needs no postage and is already addressed does not seem to be an impossible request. A list of the diseases to be reported is on every card and it includes all those in the table published this month.

## BUREAU OF INSPECTION

C. A. Abele, Director

### MEAT INSPECTION

The inspection of meat animals and carcasses to protect consumers against the purchase of diseased and spoiled meats has been an activity of several of the larger cities of the State for many years. During the last decade a number of the medium-sized and smaller communities have also instituted this service.

The principal protection of such an inspection service consists of the prevention of the sale of animals which died of disease, and of the sale of partially decomposed



meat and fish. Tuberculous cattle and hogs are occasionally found and condemned. Cases of carcinoma are more rarely discovered. Kidneys and livers are frequently condemned because of worms or flukes. But, in the last analysis, the greatest service to the public results from the fact that irresponsible or deliberately mercenary persons are prevented from marketing animals which died, and spoiled meats and fish.

Another beneficial development or corollary of meat inspection services has been the building of abattoirs or slaughter pens, at which all meat animals sold within the city limits have had to be killed. This has eliminated from these cities the unsightly and odorous kill-pens, and the occasional slaughter of animals under a convenient tree.

In the larger cities the construction of abattoirs has made possible and practical the rendering of the slaughter offal, thereby minimizing some of the most objectionable features of slaughter.

At the April, 1929 meeting of the State Committee of Public Health a resolution to the effect that meat inspection is a function of health departments was adopted.

At that time meat inspection was being conducted in twenty-four cities (twenty-one communities) as a function of the county health departments. In seven cities this service was not then a function of the health department. Since April, 1929 meat inspection has been inaugurated in two more cities, and the supervision of two established services in other cities has been made a responsibility of the county health officers.

In eighteen cities, ranging in population from 2,100 to 260,000, all meat animals must be killed at an abattoir or abattoirs, and are subject to ante- and post-mortem inspection. In four of these cities the abattoir or slaughter pen is municipally owned, and killing operations are conducted by the city or a fee for the use of the pen is charged. In Auburn the slaughter house is owned by the Alabama Polytechnic Institute. In the other thirteen cities (eleven communities) privately owned abattoirs are operated.

In fourteen cities (thirteen communities) carcasses must be brought to a design-

ated place for post-mortem inspection, or are inspected in the markets before they may be cut. This service is rather unsatisfactory as a preventive of the transmission of disease, although the sale of carcasses of animals which died, or which were infested with parasites, and of decomposed meats and fish, can be prevented.

A rather unique feature of municipal meat inspection service in this State is the fact that it is in most cases intimately associated with dairy and milk inspection, the meat and the milk inspector being one and the same person. Since the meat inspector must, perforce, be a graduate veterinarian, this association or combination of services tends to provide competent personnel for dairy and milk inspection.

The history of the development of these combined services is rather interesting. When the Standard Milk Ordinance was formulated in 1923, full-time meat inspection service was being maintained in only seven cities: Birmingham, Mobile, Montgomery, Anniston, Gadsden, Tuscaloosa, and Huntsville. In several other cities, including Selma, Auburn, Opelika, and Dothan, this inspection was of a part-time nature—a practicing or otherwise-employed veterinarian making the inspections, stamping the carcasses, and collecting for this service certain fees fixed by the municipality.

Mobile and Montgomery already had full-time dairy and milk inspectors when the Standard Milk Ordinance was adopted in 1923. In Anniston, Gadsden, Selma, and Tuscaloosa this activity was being carried on by the meat inspector. But, in the other cities which adopted the milk ordinance provision for the personnel and maintenance of this new activity had to be made. Accordingly, a meat inspection ordinance was usually introduced simultaneously with the milk ordinance, whenever the size of the community justified and assured the support of a full-time meat inspection service, and the inspection fees were fixed at a level to make the service self-supporting. Such meat inspection services were made functions of the county health departments, thereby making it possible for the health officer to employ an inspector with the stipulation that dairy inspection would also be his duty.

On October 1, 1931 meat inspection service was being maintained in the following cities:

Full-time meat inspection only:

Birmingham (also Federal B. A. I. inspection)  
 Mobile  
 Montgomery (also Federal B. A. I. inspection)  
 Tuscaloosa (Federal B. A. I. inspection only full-time )

Meat inspection combined with dairy and milk inspection:

Alabama City (Gadsden)	Lanett (Opelika)
Andalusia	Opelika
Anniston	Opp (Andalusia)
Attalla (Gadsden)	Parrish (Jasper)
Carbon Hill (Jasper)	Selma
Cordova (Jasper)	Shawmut (Opelika)
Decatur	Sheffield
Dothan	Tuscaloosa
Florence	Tuscumbia (Sheffield )
Gadsden	Tuskegee (Union Springs)
Hartselle (Decatur)	Union Springs
Huntsville	
Jasper	

Part-time meat inspection (not connected with the health department):

Auburn (Inspector on faculty of Veterinary College)  
 Atmore Flomaton  
 Brewton LaFayette  
 Troy (Inspector functions as member of health department staff).

The current economic conditions have so decreased the consumption of meats, and the distribution systems of large packers have so materially reduced the sales of locally slaughtered meats, that very few of the meat inspection services are now self-supporting, on the basis of inspection fees collected, but are being maintained by the augmentation of fees with appropriations from the general funds of the cities. The dairy and milk inspection services, conducted in conjunction with meat inspection, justify appropriations to augment the meat inspection fees, and those interested in the public health of the cities in which they reside will do well to keep themselves ad-

vised of the status of their meat and milk inspection services.

## BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

### VISITORS AS AN OPPORTUNITY FOR STAFF EDUCATION

Contributed by  
 Francis C. Montgomery  
 Assistant Director

Staff education is an essential feature of the well-rounded program of any bureau that strives to keep its members alert. Opportunities of an educational nature are not easily found in a rural nursing field, but when such opportunities do present themselves, the wide-awake nurse avails herself of all her educational possibilities, whether of a practical or an academic nature. It has been Alabama's good fortune to have brought to its nursing staff a source of education which is perhaps in the nature of "a return in full measure, heaped up and running over".

For several years it has been the pleasure and privilege of the Alabama State and county health departments to welcome visitors from numerous foreign countries and from many states of our own country for periods of observation of public health activities. These visitors, who have been with us for periods varying in length from a few days to a month or longer have been nurses, doctors, public health administrators, hospital executives, teachers and staff workers; and their interests have centered largely in public health organization and work in rural fields.

During the periods of observation the usual county activities have been carried out with slight variations to meet the visitor's individual need and with consideration for her future activities. This flexible program, which has seemed most satisfactory from the standpoint of both visitor and host, requires a stay of about two weeks in the State. Of this time, two days are spent in the central office visiting the various bureaus and talking with the bureau chiefs. A week is spent in a rural county observing the work of each member of the county unit. Four days are spent in Birmingham and Jefferson County for observation of



the work of a city and of a larger county staff. For the last day the visitor returns to the central office for the purpose of clearing difficult questions and for smoothing the rough edges.

During the five years from 1927 to 1931 the Bureau of Child Hygiene and Public Health Nursing has received for such a period of observation 72 visitors. The visitors have included executives from schools of nursing, physicians, teachers and staff members from many countries. The various countries and states of our own country from which our visitors have come will interest you. From foreign countries, they have come to us from Japan, Canada, Bulgaria, Jugoslavia, France, England, Czechoslovakia, Ireland, Africa, China, Roumania, Austria, Spain, Finland and Italy; from our own country—Minnesota, Ohio, Connecticut, Tennessee, Virginia, South Carolina, California, Wisconsin, Indiana, Nebraska, New York, Washington, D. C., Washington, Colorado, Massachusetts, Michigan, Maryland, Oregon, Rhode Island and the Phillipine Islands.

The visit completed, the visitor returns to her own field of endeavor, and, if we are to believe the oft-repeated assurances at farewell, goes with a larger vision of the opportunities of the public health workers in rural fields.

Through contact with these foreign visitors and with those from parts of our own country, the Alabama public health workers are given a broader vision. The contact with the rich personalities of the visitors, the insight into their problems and their aspirations, and the contagion of their enthusiasm cannot fail to give inspiration to those whose good fortune it is to entertain them even for a short time. Although the program for the visitors is informal and an incidental feature of our staff education, we feel it to be one of the most important and one whose influence is most vital and permanent.

Not all counties have been visited, but fortunate the county staff that has had direct contact with workers and thinkers from other countries and other sections of the United States. Fortunate also are those who have not shared in direct contact but who have enjoyed the stimulation of reports of such visits.

## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

### USE OF MINNOWS AS AN AGENT IN MOSQUITO CONTROL

Contributed by

C. C. Kiker

Assistant Sanitary Engineer

At present there are several diseases known to be transmitted by mosquitoes in different parts of the world. Malaria is the only one of these diseases occurring in Alabama.

It has been said that the science of medical entomology is still young and the relationship of mosquitoes to these and a number of other diseases has not yet been precisely determined; yet it seems likely that as knowledge of disease transmission increases, the role of the mosquito will assume greater rather than less importance.

In Alabama the mosquito responsible for malaria transmission is the *Anopheles quadrimaculatus*. We have mosquitoes that are responsible for the transmission of other diseases, but there is no way for them to become infected as the diseases do not exist in the human host.

When attempting to control any of these diseases the health worker usually directs his greatest effort at preventing the production of the mosquito or, if this is not feasible, in preventing contact between man and mosquito. The former is the more positive as there can be no transmission where there are no mosquitoes.

The development of the mosquito from egg to the winged insect takes place in water. It is here that primary efforts at control are directed through drainage or, if complete elimination of the breeding place is not feasible, through killing the larvae with oil or Paris green, or aiding the natural enemies of the larvae in their predacious habits.

We are to consider here the latter control measure. The biological method of combating insects is not new. Long before the theory of disease transmission by mosquitoes was proven larvivorous fish were being used in mosquito control work; and in the field of agriculture much had previously been accomplished through man's introducing and aiding an unobjectionable insect to destroy a pernicious one.

It is said that science is much indebted to the laity for calling attention to the usefulness of fish for mosquito control. In Georgia, as early as 1854, a certain Dr. Fort freed a tank of all its larvae by placing in it a dozen or more small fish. It was noticed by a Mr. Russell in Bridgeport, in 1891, that all larvae had disappeared from a pool left by a receding tide which had brought in a number of fish. In a neighboring pool of the same sort which contained no fish, the larvae were very numerous. It was not until 1900, however, that active interest was begun to be taken in the use of fish in mosquito control. Since that time a great number of field observations and experiments have been made. As a consequence a person may now go through the literature and glean facts which will enable him to apply biological control measures against nearly every type of mosquito known. It must be pointed out here, however, that only in rare instances may we expect larvivorous fish to completely control mosquito production. The effectiveness depends on many things, namely, the activity, ability to produce, and hardiness of the fish, together with the presence of their natural enemies, and the hand which man may take in the struggle for existence between fish and larvae.

Alabama is the natural habitat of a small top minnow, the *Gambusia affinis*, which has gained such a reputation for usefulness in the control of anopheles mosquitoes that it is being stocked in various waters throughout the world where malaria control is being undertaken. In addition, the laws of several of the Southern States specify that newly impounded waters shall be stocked with gambusia. While this minnow is our most effective fish, there are others which prey on anopheles larvae and to such extent are useful. The above applies to anopheles larvae which are normally found in natural or artificial ponded water. Other fish have been found more suitable for different type mosquito breeding places. For instance, the *Aedes aegypti* mosquito produces in artificial water containers. At Merida, Mexico, the "mojarra", a perch, was found to be the fish par excellence for destroying the mosquito larvae in fresh water containers of all kinds. After trial the "top minnow" was abandoned in favor of the "mojarra".

Some field workers are prone to overrate the gambusia while there are others who attach very little importance to their usefulness. Full recognition of the facts are probably lacking in each case. We do know that gambusia feed in part on mosquito larvae as revealed by stomach examinations. On the other hand, considerable mosquito production has often been observed to come from ponded areas well grown up with vegetation. This is not surprising when we recognize that under natural conditions nature will not permit the extinction of any particular species. The procedure, therefore, is for man to take a hand and alter the natural state making conditions unfavorable for the pernicious species. This is just what is done when a ponded water is cleared of vegetation, stocked with gambusia, and the water-level fluctuated. The clearing limits the possible mosquito breeding area to the margins of the pond. The water-level fluctuation then interferes with production here by disturbing the larvae food supply and exposing them to the gambusia and other natural enemies. Natural and artificial wave actions as well as routine shore line clearing have been relied upon where water level fluctuation was not possible.

For the gambusia to remain effective they must be protected against the larger predacious or game fish. In some ponds restocking must be done every year.

In summary, it might be said that the minnow, when aided by man, offers a relatively inexpensive means of limiting, if not completely preventing, mosquito production in many types of mosquito breeding places.

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**Diphtheria Immunization**—In recent tests among 1,500 children, it was found that about 83% were immunized by toxin-antitoxin and 96.7% by the toxoid preparation.

In testing children for immunization after toxoid is used, it is noted that there are fewer pseudo or false reactions in the test reading than is observed when they had used a toxin-antitoxin mixture. The readings are more clear and definite. All reactions after the use of toxoid are very mild. However, it is advisable in all cases in giving these injections to have the child under the observation of the physician treating it for twenty or thirty minutes, so that any unusual reaction may be observed. Should any toxin reaction show, the use of adrenalin hypodermically will very quickly alleviate the condition.—From Pittsburgh's Health.



## CURRENT STATISTICS

## State Department of Health

## \*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1931 September	1931 August	Total Cases to Date This Year	Last Year
Typhoid .....	127	255	702	634
Malaria .....	373	396	1724	3819
Smallpox .....	3	2	282	176
Measles .....	26	64	9173	3528
Scarlet Fever .....	156	85	1055	744
Whooping Cough .....	81	62	687	1556
Diphtheria .....	299	112	978	635
Tuberculosis .....	419	464	4026	3076
Pellagra .....	110	122	1110	540
Meningitis .....	5	17	202	105
Tetanus .....	5	11	36	36
Influenza .....	13	18	5782	2739
Dengue .....	1	0	2	10
Poliomyelitis .....	10	4	41	37
Pneumonia .....	34	50	2897	2257
Chickenpox .....	21	19	1529	1738
Mumps .....	13	15	1064	553
Encephalitis .....	4	4	41	26
Ophthalmia Neonatorum .....	2	0	11	18
Typhus .....	5	12	41	48
Trachoma .....	0	0	1	15
Undulant Fever .....	1	3	12	14
Tularemia .....	0	0	5	6
Rabies .....	1	1	2	4
Syphilis (private cases) .....	123	128	1256	1371
Chancroid (private cases) .....	5	7	61	67
Gonorrhea (private cases) .....	167	115	1235	1460

\*As reported by physicians and including deaths not reported as cases.

PROVISIONAL MORTALITY STATISTICS  
August 1931

	Number of Deaths Registered August 1931			Annual Rate per 100,000 Population		
	White	Black	Total	Aug. 1931	Aug. 1930	Aug. 1929
ALL CAUSES .....	1092	1060	2152	942.0	1018.6	1075.0
Typhoid fever .....	18	16	34	14.9	16.4	17.0
Small pox .....						
Measles .....	2	2	4	1.7	1.3	0.1
Scarlet fever .....	1		1	0.4		0.9
Whooping cough .....	4	5	9	3.9	8.0	11.6
Diphtheria .....	5	4	9	3.9	2.2	7.1
Influenza .....	6	5	11	4.8	4.4	8.9
Pneumonia, all forms .....	42	29	71	31.1	38.5	31.0
Poliomyelitis .....					0.9	1.3
Tetanus .....	2	4	6	2.6	2.2	3.1
Tuberculosis, all forms .....	66	129	195	85.4	78.8	77.0
Tuberculosis, pulmonary .....	60	114	174	76.2	72.6	67.6
Malaria .....	12	15	27	11.8	15.1	32.7
Cancer .....	68	48	116	50.8	50.9	43.4
Diabetes mellitus .....	15	7	22	9.6	5.3	4.9
Pellagra .....	14	31	45	19.7	24.4	31.8
Cerebral hemorrhage, apoplexy .....	61	64	125	51.7	54.5	55.5
Diseases of heart .....	123	111	234	102.4	122.7	122.6
Diarrhea and enteritis .....						
Under 2 years .....	62	25	87	38.1	34.5	32.7
2 years and over .....	13	4	17	7.4	13.3	8.9
Nephritis .....	83	92	175	76.6	96.5	90.8
Puerperal state, total .....	13	13	31	13.6	16.4	21.6
Puerperal septicemia .....	5	4	9	3.9	6.2	10.7
Congenital malformation .....	14	4	18	7.9	8.0	11.6
Congenital debility and other diseases of early infancy .....	71	48	119	52.1	59.8	63.1
Senility .....	16	13	29	12.7	14.6	16.1
Suicides .....	14	1	15	6.6	6.2	7.2
Homicides .....	20	22	42	18.4	24.4	19.2
Accidental burns .....	3	4	7	3.1	2.2	2.2
Accidental drownings .....	6	5	11	4.8	10.2	12.1
Accidental traumatism by firearms .....	1	3	4	1.7	3.5	7.6
Mine accidents .....	1		1	0.4	4.9	3.1
Railroad accidents .....	3	3	6	2.6	5.7	3.6
Automobile accidents .....	35	18	53	23.2	23.5	14.8
Other external causes .....	40	22	62	27.1	24.8	22.8
Other specified causes .....	172	157	329	144.0	153.7	180.8
Ill-defined and unknown causes .....	81	156	237	103.7	89.5	101.1

## County Society News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

## CHILTON COUNTY

T. J. Marcus, Secretary

At the meeting of the Southeastern Division of the Association held at Clanton on October 6, 1931 (referred to in the October Journal), Dr. W. W. Harper of Selma discussed "The Diagnosis of Acute Abdominal Conditions in Infancy; Dr. C. R. Bennett of Eufaula demonstrated a case of pernicious anemia; Dr. M. Y. Dabney of Birmingham read a paper on "Trichomonas Vaginalis Vaginitis"; and Dr. J. Harold Watkins, Montgomery, discussed "The Diagnosis and Treatment of Bronchiectasis, Using Iodized Oil" A short talk by Dr. J. N. Baker concluded the scientific program after which a barbecue was served by the Chilton County Medical Society. The Vice-President of the Division, Dr. G. W. Williamson, presided.

## COVINGTON COUNTY

F. H. Boyd, Secretary

Dr. F. H. Boyd of Shorter, a graduate from the Emory University School of Medicine, 1930, has been elected health officer of Covington County and secretary of the society. In both capacities Dr. Boyd succeeds Dr. B. B. Matthews, resigned.

## JACKSON COUNTY

M. H. Lynch, Secretary

Miss Elma Taylor, utility nurse of the State Department of Health, has been assigned Jackson County for a period of two months to assist the local department in its tuberculosis control program.

School children of the county received instruction October 13 and 14 in dental hygiene. Dr. M. L. Rutland of the Division of Oral Hygiene was the lecturer.

## LAWRENCE COUNTY

R. E. Harper, Secretary

The Lawrence County Medical Society met in regular session October 6 in the office of the health unit. Dr. J. P. Dyar, Moulton, presided in the absence of the President, Dr. J. F. Huey.

## LEE COUNTY

A. H. Graham, Secretary

At a meeting of the Lee County Medical Society on October 8, a very interesting paper—and case report—on “Erythema Nodosum” was given by Dr. Julian Palmer.

The November program was announced as a “Symposium on Tuberculosis”. The State diagnostic clinic will be present at this time and actively participate in the subject presentation.

Dr. L. R. Murphree was appointed Assistant County Health Officer for Lee County effective August 1st. He was previously health officer of Limestone County and has just returned from postgraduate study at the John Hopkins School of Public Health.

## MADISON COUNTY

W. G. McCown, Secretary

The Madison County Medical Society held its regular monthly meeting Tuesday evening, October 13 at 7:30 o'clock in the private dining room of Hotel Russell Erskine. The meeting was well attended and a very interesting program was given.

Dr. J. A. Kyser of Madison, who has been very ill in a Birmingham Hospital, has recovered sufficiently to be removed to his home.

Dr. T. K. Mullins of Huntsville died September 19, 1931.

## MARION COUNTY

M. S. White, Secretary

The Marion County Medical Society held an interesting and well attended meeting at Brilliant, October 6. Several papers were read and discussed. After the meeting, the ladies of the M. E. Church, South, Brilliant-Boston, served a splendid dinner.

The Marion County Health Unit has been doing much good. The laity is appreciating its activity. All physicians, who are members of the Marion County Medical Society, are appreciative.

Another chest clinic will be held in this county some time in December, of this year. Much benefit has been derived from the clinics held, in this county, in the past.

## PIKE COUNTY

M. A. Kirklin, Secretary

At a meeting of the Pike County Medical Society held at the Elks Hall, Troy, October 13 at 7:30 P. M., the following program engaged the attention of a number of members and visiting physicians:

“Bone Cases”—Dr. E. Lawrence Scott, Birmingham.

“Bronchiectasis—Diagnosis and Treatment with Iodized Oil”—Dr. J. Harold Watkins, Montgomery.

Lantern slides were used by Drs. Scott and Watkins.

## SUMTER COUNTY

J. S. Hough, Secretary

Dr. H. B. Gilmer has moved to Geiger from Memphis, Tennessee.

Dr. R. H. Hale died at York on October 2. Dr. Hale was the oldest member of the society and had practiced in York for about 50 years.

## TALLADEGA COUNTY

J. H. Hill, Secretary

The Talladega County Medical Society is holding its winter meetings on the first Tuesday evening of each month at the Purefoy Hotel.

The October meeting was featured by addresses by Dr. W. M. Salter of Anniston and Dr. Walter Scott of Birmingham.

Dr. Salter discussed the subject “School Strain in Its Relation to Malnutrition” and Dr. Scott discussed “Intravenous Pyelography”.

Out-of-town visitors other than the speakers were Dr. Joe Heacock of Birmingham and Dr. Gerald Woodruff of Anniston.

## TALLAPOOSA COUNTY

Jno. A. N. Nolen, Secretary

At a meeting of the Tallapoosa County Medical Society held at the Tallapoosa River Bridge, October 13, 1931, Drs. I. D. Wood, Sylacauga, S. H. Newman, Dadeville, and Joe Banks, Dadeville, read papers. Dr. Newman used influenza as his subject. Dr. Banks dealt with experiences in the management of venereal diseases.



## Book Abstracts and Reviews

*Tales of Food Values.* By Alice V. Bradley, B. S. Price, \$2.00. Peoria, Ill.: Manual Arts Press.

The Manual Arts Press has published a set of "Tables of Food Values" by Alice V. Bradley, Supervisor and Instructor of Nutrition and Health Education, State Teachers College, Santa Barbara, California. Hospitals, dietitians, and physicians interested in metabolic work will find these tables convenient. There are two sets of tables, one showing the composition of average sized helpings, the other the composition of 100 gm. portions. The amount of carbohydrates, protein, and fat, the caloric value, the amount of calcium, phosphorus and iron, the value as source of vitamin, the amount of residue, and the reaction of each portion is recorded. In the case of complicated cooked dishes, like cakes, pies, home-made candies, and salads, the recipes are given in brief. There is no text except for a brief introduction explaining the use of the tables. This is the most complete set of tables the reviewer has seen.

C. K. W.

### *Causation, Diagnosis, and Treatment of Cancer.*

By James Ewing, Professor of Pathology, Cornell University Medical College. The Williams & Wilkins Company, Baltimore, Publishers.

"Seldom is it the privilege of a reader to have condensed in a thin volume such a complete and authoritative resume of one of the most difficult subjects in modern medicine. In eighty pages, one finds a survey of the causation, diagnosis, and treatment of malignant diseases in terms of their fundamentals as viewed by an experienced, seasoned writer and pathologist. It is a judicial statement made after the test of trial and error of facts new and old tempered by a close knowledge of past and current literature."

"The protean nature of cancer is not widely enough known. Perhaps the majority of physicians regard this disease as a fixed biological entity: giving certain characteristics in all patients and warranting essentially the same treatment."

The above quotations are from the preface of Ewing's book. They were written by James E. Davis, Chairman of the Lectureship Foundation Committee, Wayne County Medical Society, before which the contents of this book were delivered as the tenth Beaumont Foundation Lecture.

Certain people, theorizing on the nature of cancer, have expressed the belief that some day the cause of all cancers will be discovered and that the cause will be something quite simple. Ewing disagrees with that idea. Different varieties of cancer are as different as are the various infectious diseases and there will probably be found a separate cause for each type of cancer.

Ewing says, "The keyman in cancer diagnosis is the general practitioner. Unless he is constantly alert and fully competent to recognize the early signs of cancer, detect pre-cancerous diseases and lesions, and even to discern and warn against cancer forming habits, all subsequent medical service is handicapped or rendered futile."

In these eighty pages, Ewing has condensed the theories of the nature and origin of the different

types of cancer, the methods of diagnosis, the lack of value of serum tests for cancer, the responsibilities of the tumor pathologist, the necessity for co-operation between the general practitioner, the internist, the radiologist, the surgeon, and the pathologist. He has described the nature of the various common types of cancer and outlined the ideal methods of handling each type.

Only an inveterate worker could have gathered together such a tremendous store of information. Only an experienced author could have condensed it into so small a volume. This book will not remain long on the book-shelves of the reviewer but will be referred to frequently in the course of his daily work. It should be within arm's reach of the desk-chair of every physician.

C. K. W.

## THE FEMALE SEX HORMONE

"The Female Sex Hormone" by Robert T. Frank, published in 1929 (Charles C. Thomas, publisher), covers the work done on the subject of the ovarian hormone during a period of twenty-five years. Teachers, research workers, and gynecologists will find the book of great value, but the average practitioner of medicine will hardly find it worth his while to study the volume; for study it he must if he would properly digest and evaluate the numerous observations recorded. Because the subject is so fascinating and so important to anyone interested in gynecology, the reviewer feels it would not be amiss to outline the important facts contained in the book.

The maturing Graffian follicle, the corpus luteum, and the placenta secrete a substance which exerts a powerful influence on the entire reproductive tract. To these three structures, Frank has given the name, "The Gestational Gland". The active substance secreted by them is called the "Female Sex Hormone". This substance is responsible for the congestion and hypertrophy of the uterine mucosa which precede menstruation. These uterine changes are preparatory steps for pregnancy but when the ovum fails to be fertilized, the corpus luteum is only short-lived and the secretion of female sex hormone ceases, and menstruation follows. If pregnancy intervenes, the corpus luteum persists and continues to secrete the female sex hormone, causing a more marked hypertrophy of the uterine mucosa and the uterine muscle as well. Removal of the corpus luteum in certain animals will result in abortion but in human beings the corpus luteum is essential only for a period of two weeks, at the end of which time the placenta carries on the task of producing the female sex hormone. This hormone is responsible for the hypertrophy of the breasts which occurs during pregnancy and sometimes before the onset of the menses.

The amount of female sex hormone in the blood increases a week before the menses and continues to increase until the onset of the menses. During pregnancy, the amount of hormone in the blood is constantly increased after the seventh week and reaches great concentration. The determination of the amount in the blood is used as a method of

differentiating pregnancy from other conditions. The female sex hormone is also found in menstrual blood and in the urine of pregnant women. The corpus luteum seems to have a second hormone which inhibits maturing of the follicles and which sensitizes the uterus and aids in the imbedding of the ovum.

In testing for the female sex hormone, the material to be tested is extracted and injected into a female animal, either immature or castrated. The hormone causes an hypertrophy of the reproductive organs and estrus. Allen and Doisy have shown that estrus in the rat or mouse can be definitely proved by an examination of the vaginal smear. During the resting stage the vaginal smear shows only leucocytes. After a positive reaction, the leucocytes disappear and nucleated or non-nucleated epithelial cells take their place.

The female sex hormone is capable of causing hypertrophy of all parts of the female reproductive tract except the ovaries. The anterior part of the pituitary secretes a hormone which causes enlargement of the ovary and ripening of the follicles and through the ovarian stimulation, stimulation of the rest of the reproductive tract as well. It is the secretion of the pituitary which initiates puberty and which regulates the cyclical changes in the ovary. During pregnancy large amounts of this anterior pituitary secretion are found in the urine. Tests for pregnancy utilize this fact. The Ascheim-Zondeck test is perhaps the best known. The urine is injected into immature mice and the mice are killed at the end of 100 hours. The presence of hemorrhagic follicles or luteinized follicles constitutes a positive reaction. Friedman uses rabbits instead. These need not be of any special age but they must have been kept separate from males, for ovulation in the rabbit occurs normally only after intercourse. Positive tests may be obtained as early as 18 to 21 days after the intercourse responsible for pregnancy.

Clinically, the tests for female sex hormone in the blood prove whether the individual is suffering from hyper- or hypo-ovarianism. Further study may improve our methods of treating amenorrheas and menorrhagias. Various preparations of female sex hormone have been placed on the market. The ones to be taken by mouth are of no value. Aqueous solutions tend to deteriorate rapidly. Amniotin (Squibb) and Theelin (Parke-Davis) seem to be satisfactory products. Thyroid extract is a valuable aid in the treatment of amenorrheas accompanied by obesity. Endocrinology will undoubtedly in the future offer great assistance to the physician in the treatment of many gynecological complaints.

## Truth About Medicines

Is Manganese An Essential Element?—Considerable has been written of late about the possible role of copper as a "promoter" of hemoglobin formation in certain types of anemia. It appears to act as a supplement to iron in this process. A similar

function has been attributed to other elements, notably manganese, though the claims are still stoutly denied by the majority of investigators. Manganese is constantly present in animal tissues and this has led to the assumption that it is likely to promote some useful purpose. Experiments have been reported in which the addition of traces of manganese to a diet of whole cow's milk supplemented with iron and copper has a favorable effect on the growth of mice and that without manganese, they failed to ovulate properly. The latter was true also for female rats. These experiments indicate that manganese may be closely connected with the reproductive organs. Other investigators also insist that manganese does not take part in blood regeneration, but that the element aids in rendering a diet complete for the support of reproduction and suckling of young. (Jour. A. M. A., October 10, 1931, p. 1078.)

The Cost of Proprietary and Nonproprietary Drugs.—A comparison of the prices of drugs sold respectively under protected and nonprotected names shows that the cost of the former is far in excess of the price for which the latter are sold. A comparison of the wholesale price of proprietaries compared with the cost of the drugs sold under their nonproprietary name shows that the total cost of one ounce each of these under a protected name is \$25.30 while the cost of an ounce each under an unprotected name is but \$6.40. The cost of the proprietary name to the consumer is \$18.90. (Jour. A. M. A., October 24, 1931, p. 1226.)

Is Vitamin A an Anti-Infective Agent?—The significance of vitamin A as an essential of human nutrition can no longer be questioned. Until recently, physiologists have been engrossed with the consideration of the more obvious manifestations of deficiency disorders. The gross lesions of scurvy, pellagra, rickets and other results of dietary defects have received foremost consideration. When mastoid and nasal sinusitis, purulent otitis media, and ocular, respiratory and alimentary tract infections were found to occur in laboratory animals deprived of vitamin A, the problem of "lowered resistance" naturally presented itself. Recent investigation has suggested that infection may follow the weakening of



the tissues, and that it may be due to the breakdown of the local tissue defenses. This has raised the question as to whether it is proper to refer to vitamin A as an "anti-infective" agent. Rats inoculated with virulent bacteria and kept on a vitamin A-free diet showed markedly decreased resistance to infection as compared with controls receiving cod liver oil. No such susceptibility to similar inoculations was found in rats on a diet deficient in vitamin D, compared to controls protected by viosterol. Increased susceptibility to infection is apparently an early manifestation of a dietary low in vitamin A. There has been a lack of evidence that vitamin A can cure infections when the barrier of the mucous membranes has been passed or that it can prevent or cure infections that enter the blood stream. The newer studies pave the way for the possibility, however, that vitamin A may after all do more than maintain the physiologic defenses of the mucous membranes. (Jour. A. M. A., October 24, 1931, p. 1229.)

**The Absorption of Levulose.**—Various investigators have asserted that levulose is particularly valuable in the dietary of patients with diabetes. Perhaps the most enthusiastic report, among the conflicting statements, is that of Joslin who is inclined to believe that levulose can be used with advantage in the diabetic diet in small amounts daily for intermittent periods. Levulose seems to cause a different type of metabolism from dextrose, possibly because of the conversion of levulose in part into fat in diabetes or to a more active stimulation of the production of insulin. A recent investigation has shown that levulose is not changed to dextrose in the intestines. Whatever transformations occur take place beyond the seat of absorption. (Jour. A. M. A., October 24, 1931, p. 1230.)

**The A. M. A. Chemical Laboratory.**—The A. M. A. Chemical Laboratory cannot analyze specimens for individuals. 1. The chemical work undertaken by the Laboratory must be of *general* interest to physicians. 2. The Laboratory is busily engaged in the work for which it was founded, namely, investigations of the newer remedies for the Council on Pharmacy and Chemistry. 3. The Laboratory undertakes examination only of products in original

containers, bearing original labels and the source of which can be vouched for in case of possible court action. 4. The present Laboratory would need much enlargement and a far larger staff to examine specimens for all of the one hundred thousand physicians it is designed to serve. (Jour. A. M. A., October 3, 1931, p. 1001.)

**Foods and Food Advertising.**—Today, advertising of foods, separate from the package container, is not controlled by any food statutes, and indeed is quite free of any efficient control. The writer of advertising food products, aside from such limited knowledge of foods and nutrition as he may possess, has only a versatile vocabulary and his conscience as guides in dramatizing the virtues of the products he proclaims to the public. Under these conditions, advertising for food products began to approach the tales of Hans Christian Andersen and the brothers Grimm. Into this mass of mingled truth and deception entered the Committee on Foods of the American Medical Association. It is not surprising that its initial steps should have been greeted with apprehension and bitter deprecation by some of the organs of the food industry, of business and of advertising. The Committee on Foods was established to protect the readers of the journals published by the American Medical Association against improper claims made for foods. If the medical profession required such protection, how much more was the protection necessary for the average layman to whom the same claims were made as were made to physicians. Only those who have been actively associated with the Committee on Foods can realize the vast amount of good already accomplished. (Jour. A. M. A., October 3, 1931, p. 1004.)

**Preliminary Reports of the Council on Pharmacy and Chemistry.**—New drugs are constantly being introduced and new uses are discovered for substances already known. If such a drug is of non-secret composition and its early trials appear to give promise of therapeutic value, the Council on Pharmacy and Chemistry may publish a preliminary report on it explaining that its therapeutic status is in the experimental stage but that the evidence presented may warrant a clinical trial in selected, controlled cases. (Jour. A. M. A., October 31, 1931, p. 1301.)

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## THE TREATMENT OF FIBROID TUMORS OF THE UTERUS\*

AN ANALYSIS OF 318 CASES\*

W. C. DIXON, M. D., F. A. C. S.  
Nashville, Tenn.

Fibroid tumors of the uterus are the most frequent tumors occurring in the human body. Accurate figures as to their frequency are obviously difficult to obtain. Bland states that 20 per cent of all women who reach the age of 35, and 40 per cent of those who reach 50, have them. Graves states that 40 per cent of all women have fibroid tumors, and that nearly all single women of middle age have them. Boyd estimates their incidence in white women as 1 in 5, and negro women as 1 in 2. Fortunately many of them do no harm, and the mere presence of such a tumor does not in itself call for treatment. The fear of malignant degeneration has caused many of them to receive active treatment unnecessarily.

A woman with a small symptomless tumor should have explained to her the nature of the growth, and its essentially benign character, and should be advised to submit to yearly examinations, so that any increase in size could be noted. It is estimated by Lockyer that approximately 55 per cent of these tumors never cause symptoms.

The symptoms which usually demand treatment are rapid growth, hemorrhage, pain and evidence of degeneration or necrosis.

Very large tumors are prone to undergo degeneration, develop complications and require treatment even in the absence of

symptoms. Pressure of the growth on some abdominal viscus, or the subjective symptom of weight and pressure experienced by the patients, frequently call for treatment. Careful consideration of each case, first as to the need for treatment, and second as to the best method for that particular case, is always necessary. No single method is always applicable. Palliative treatment is sometimes necessary for hemorrhage or associated pelvic inflammation. Rest in bed and prolonged hot douches are of value for both of these conditions, and ergot is helpful in the bleeding cases. Occasionally blood transfusion may be necessary as an emergency measure.

We have at our disposal two radical methods of treatment: radiation, either in the form of radium or deep x-ray therapy, and surgery. Radium and x-ray produce results by their destructive action on the ovarian follicles. By the induction of an artificial menopause they control hemorrhage and produce a decrease in the size of the growth. They may have some direct action on the tumor, but a successful result is usually not obtained unless a permanent amenorrhea is produced. In women under 35 years of age, the preservation of the possibility of conception is an important consideration, and even if pregnancy does not occur, continuation of the menstrual function allows the woman to escape the nervous phenomena of a premature menopause.

For this reason radiation should not be used in women under 35 years if it is possible to remove the tumor and have enough endometrium left to carry on menstruation.

Radium should not be used in case there is associated pelvic infection, even if this

\*Read at the meeting of the Northeastern Division of the Association, Guntersville, September 9, 1931.



is old and quiescent, as there is danger of lighting up such an infection with disastrous results.

Deep x-ray therapy does not carry this danger to such a degree. Other generally accepted contraindications to radium are: tumors larger than a three months' pregnancy, submucous tumors, or tumors undergoing degeneration.

Cases which show an anemia, out of proportion to the amount of hemorrhage the patient has had, should not be treated by radium, as this usually indicates a degenerating tumor. If radium is to be used the uterus should be curetted, and the tissue removed examined for carcinoma of the uterine body. It is generally believed that the incidence of cancer of the body of the uterus is increased in women with fibroids.

The finding of cancer, of course, calls for hysterectomy, since radium does not offer as good a chance for cure as does hysterectomy.

This precaution applies also to deep x-ray therapy. For this reason, and the further fact that burns of the skin, intestine, or bladder may be caused by x-ray, radium is a more popular method of radiation.

Modern x-ray equipment, together with proper screening and a proper technique, can overcome the danger of burns, but if the patient is to be curetted to exclude malignancy, it seems best to combine this with the simultaneous application of radium.

Small tumors in women approaching the menopause, where pelvic infection can be ruled out, where pain is not present, and where hemorrhage is the outstanding symptom, offer the ideal class of cases for treatment by radium.

In view of these limitations, it is evident that most fibroids requiring treatment are best treated by surgery.

Submucous tumors presenting in the vagina are usually easily removed, as they are generally attached by comparatively small pedicles.

Vaginal hysterectomy for tumors of the body of the uterus has a limited field since only small tumors can be dealt with by this route: cases complicated by infection and adhesions are more difficult than if abdominal section is done. Supravaginal hysterectomy removes the tumor and any associated pelvic pathologic conditions. It leaves behind the cervix. The woman,

therefore, has the average liability to cancer of the cervix. For this reason a good deal has been said about the advisability of doing panhysterectomy on all cases. But this operation unquestionably carries a considerably higher mortality than supravaginal hysterectomy, and the increased mortality would more than offset the deaths due to cancer occurring in the remaining cervix.

If the cervix is badly lacerated and eroded, or suspicious of malignancy, the additional risk may be justified. But if panhysterectomy is adopted as a routine procedure as a prophylactic method against cancer, it will cost more lives than it will save.

There is considerable difference of opinion as to whether one or both ovaries should be left, assuming that one or both are normal. The ovary has an internal secretion which is of value in controlling the nervous symptoms incident to the artificial menopause. For this reason it would seem that if normal ovarian tissue is present it should be left, even with the knowledge that it is difficult not to interfere to some extent with its circulation, and that occasionally symptoms may develop because it was left. If the tubes are normal, leaving them helps to preserve the ovarian circulation.

Myomectomy is growing in popularity as the preferred method of treatment in small isolated tumors in young women. It removes the tumor or tumors, but leaves the possibility of pregnancy, and the menstrual function. It also leaves the possibility of the development of other tumors, as small fibroids not found at the time of operation may later develop and cause symptoms. It is a more difficult operation than hysterectomy from the technical standpoint, and is more apt to be followed by adhesions. However, in spite of these drawbacks, it has a very definite field in young women, where it is important to preserve the possibility of pregnancy. There is a great temptation in operating on these cases to do multiple operations. Since the patient has decided on the great adventure, she wants everything done that is necessary or may become necessary. The removal of the appendix, or gallbladder, or plastic operations are frequently desirable, but serious thought should be taken as to whether they would not increase the mor-

tality or morbidity. In this day of improved anesthesia and more comfortable convalescence, nothing in the nature of multiple operations should be undertaken without due consideration. The results of surgery or radiation in properly selected cases of fibroid tumors are good. The patient is relieved of her disability, hemorrhage is controlled, and her pain is relieved.

The mortality is largely dependent on the condition of the patient, the size of the tumor, and the number and seriousness of the complications.

Statistics from private clinics, dealing with intelligent patients who seek advice early, show a low mortality.

Kelly and Cullen in a large series of cases had a mortality of 5.5 per cent. General charity hospitals, taking all patients needing treatment, necessarily receive many late and neglected cases. Statistics from such institutions, however, probably give a better average idea as to the true mortality of this condition than do the results in private clinics, with a clientele of highly intelligent patients.

In an effort to obtain an idea of results in such institutions, I have reviewed the histories of 318 cases treated in the Nashville General Hospital during the past 10 years. These cases were treated by various men on the gynecological service during this time.

Of the 318 cases, 75 occurred in white women, 243 in negro women. During this time the number of white women admitted exceeded the number of negro women. The average age was 38 years. Of the total number 108 had not borne children.

The chief complaint, in the order of frequency, was pain in the abdomen, in 129 cases; the presence of a tumor in 109 cases; and abnormal bleeding in 71 cases.

An uncomplicated fibroid does not cause pain, and this finding is indicative of the number of cases with complications. The fact that 109 patients came in because of the tumor is perhaps explained by the large size of many of the tumors.

Abnormal bleeding, which is said by many textbooks to be the most characteristic symptom, was third in order of frequency. Some presented more than one complaint, but these were the most frequent.

The number of patients subjected to radical treatment, either operation or ra-

diation, was 256. Of these 20 had a complete hysterectomy, with 3 deaths; a mortality of 15 per cent. One died with intestinal obstruction, one from shock, and one from peritonitis. Other surgery done on these patients included 9 appendectomies, 1 reduction of an intussusception, and 1 perineorrhaphy. 210 patients had supravaginal hysterectomy with 15 deaths, a mortality of 7.1 per cent. This includes all deaths, although there were some cases where other pathologic conditions present may have been the real reason for the death. For instance, a woman who had a hysterectomy also had syphilis, developed a severe case of Vincent's angina, later decubitus ulcers, and died six weeks after operation with exhaustion and malnutrition.

The causes of death were as follows: embolus 3; pneumonia 2; hemorrhage and shock 3; cardiac dilatation 1; blood stream infection 1; peritonitis and obstruction 5.

Of the cases dying of peritonitis, one had at the time of operation a ruptured appendix, and another an ovarian cyst with a twisted pedicle. (Of the 209 supravaginal hysterectomies 48 had both tubes and ovaries removed; 34 both tubes and one ovary; 16 both tubes; 36 one tube and one ovary; 34 had the uterus alone removed, and 91 had appendixes removed.)

Of the 244 cases in which the abdomen was opened, other pathologic conditions were present as follows: inflammatory lesions of the appendages in 110 cases, or 45 per cent; ovarian cysts in 35 cases, or 14.3 per cent. There was one case of ectopic pregnancy, one of intussusception, seven of acute appendicitis, and 34 of chronic appendicitis.

Myomectomy was done in 15 cases, with one death, a mortality of 6.6 per cent. This patient died of peritonitis, secondary to the removal of a subserous tumor with a twisted pedicle which had become gangrenous. A number of these patients were subjected to additional surgery, such as appendectomy, removal of appendages, suspension of uterus, etc.

Radium was used on 11 cases with one death, a mortality of 9.1 per cent. This patient was extremely anemic, and had two blood transfusions, followed by the radium. Infection occurred in the tumor and she succumbed to shock and sepsis. This, of



course, does not represent the true mortality in cases treated by radium. One death in such a small number of cases gives an abnormally high mortality.

One patient was admitted in a very septic condition from pelvic abscesses secondary to a degenerating fibroid. She had two vaginal incisions and one abdominal incision to evacuate collection of pus, and finally succumbed to sepsis without any more radical procedure.

There were 61 women with tumors admitted to the hospital who were not operated on for various reasons. In this group there were two deaths, a mortality of 3.2 per cent. One of these women died from acute endocarditis, pneumonia, and cachexia, caused by a cystic infected fibroid, which, at autopsy, weighed 17 pounds. The other died from peritonitis secondary to the rupture of a fibroid abscess. This mortality of 3.2 per cent in the cases not operated on is an index of the type of patient received in the hospital. The total mortality on all fibroids admitted to the hospital was 6.9 per cent whether operated on, or not.

In the cases operated on, one or both ovaries was left in 200 instances. No effort was made to follow up these patients but the histories of those who had re-entered the hospital were examined to see if any case of cancer of the cervix, or ovarian pathology, had returned for treatment.

There were 49 re-entries. Five of these were for conditions associated with the operation. One patient had a persistent leucorrhoea requiring cauterization of the cervix, two had prolapse of the vaginal wall, one had cystitis, and one who had had a supravaginal hysterectomy came back later with a cervical fibroid.

The other re-entries were not for conditions connected with the operation. However, some of these patients may have gone elsewhere for relief of these conditions. Unfortunately these tumors were not examined for the occurrence of cancer of the body of the uterus. Gardner advises the opening of the uterine cavity before the operation is completed, so that if carcinoma is present panhysterectomy can be done.

There were 3 cases of carcinoma of the cervix in the series. Goitre and heart dis-

ease are said to occur more frequently in women with fibroids. However, in this group there were only three patients with goitre, and six with demonstrable heart lesions. This is probably no higher than the average incidence of these two conditions.

An examination was made of the records of all the patients who died to determine if possible, the influence of other operative procedures on the mortality. One patient who had an ectopic pregnancy with rupture had the tube and ovary removed, and a hysterectomy done because of a fibroid. She died from obstruction. Another had a perineorrhaphy, hysterectomy, and appendectomy, and died from pneumonia. Another patient had an ovarian cyst said to have contained two gallons of fluid. This was removed and a hysterectomy done with a fatal result from obstruction.

One patient had an ovarian cyst the size of a grapefruit, and a pyosalpinx. These were removed and a hysterectomy and appendectomy done, with death from peritonitis.

Another patient had a history of acute pain in the abdomen, nausea and vomiting, leucocytosis, and right-sided tenderness. She had a large tumor. At operation the tumor was removed, when it was discovered that she had a ruptured, gangrenous appendix, which was removed, followed by death from peritonitis.

In these five cases, it is probable that less extensive surgery might have been wiser, and might have resulted in a lower mortality.

The frequency of these tumors and the serious results which may be brought about by their presence demand careful consideration of each case.

Many among the laity have a fixed idea that they do not harm. They are content to endure the discomfort associated with a tumor, in the belief that the menopause will bring relief. This, no doubt, accounts for many late and complicated cases.

A medical mortality of 3.2 per cent in this series, shows that this view is wrong.

By individual study of each case as to the need for treatment, and as to the best form of treatment for that particular case, the mortality can be lowered, and better end results obtained.

## PELLAGRA\*

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In a recent quotation made by the State Health Department from a U. S. Public Health Bulletin, and circulated among the physicians of the State, appears the following:—

"Pellagra is strictly a dietary disease, and is caused by an inadequate supply of an essential food element which belongs to the class of accessory food principles known as vitamins. Pellagra results from a diet which does not permit a sufficient supply of antipellagric vitamins or vitamin G."

For reasons to be given below, I am compelled to take issue with the prudence and propriety of the above definite and positive statement. I shall maintain that up until the present, at least, the proper position to be maintained is that pellagra is a disease of unknown cause. The late Doctor Goldberger did not, nor has anyone else proven pellagra to be due to a dietary deficiency cause, any more conclusively than has been proven that tuberculosis, malaria, typhoid fever or any other infectious disease may be due to a dietary cause. Had the same experiments been performed in connection with tuberculosis the same results probably would have obtained. If two groups of persons had been subjected to a known infected residence or ward with tuberculosis, one group being given an ample, well-balanced, nutritious diet, and the other given a limited, unbalanced or starvation diet, the result expected would have been that many on limited or starvation diet would have developed tuberculosis while scarcely one, if a single one, being fed a wholesome diet would have taken the disease, just as was the case with the pellagra experiment. Malnutrition or diet deficiency, no doubt, predisposes to tuberculosis, pellagra or any of the other diseases to which vital resistance is the defense.

On the other hand, the history of pellagra as a disease and the course it pursues in the individual cases all argues in favor of some obscure or unknown specific cause of a bacterial or protozoal nature.

The adherents to the dietary theory as a cause do not produce any evidence or proof which undertakes to explain away

or satisfactorily reconcile four outstanding, contradictory facts, as follows:

First:—*The Sudden Appearance of Pellagra in Almost Epidemic Form Argues for Specific Cause as Against Dietary Cause*:—We know there had been, if any, only rarely a case in this country before 1902, only a sporadic case being reported here and there in the literature. It appeared all over the southeast, spreading between foci till 1905 and '06 it became prevalent. There was no sudden change, diminution or restriction of dietary throughout the general population of our southeastern country coming on suddenly and at once as did the appearance of pellagra in this territory.

Second:—*Geography and Climate*—There is no justification of the assumption that dietary became restricted only in the southern and southeastern country about the time of the advent of pellagra, and from that time until now as against the common knowledge that the poor in the slums of eastern and northern cities, and certainly the poor in as many instances of rural population of the east and north were on limited or deficient diet at the same time, whereas, in 1905, '06 and '07 when pellagra was most prevalent and most virulent south of the Potomac River, (southeastern states and including only two states north of the Ohio, and only two or three states of the south lying west of the Mississippi), while there were no cases of pellagra to be found in the north or east. At the time pellagra was most prevalent the writer visited institutions of Georgia, South Carolina, St. Elizabeth's at Washington and New York institutions, being already familiar with conditions here in Alabama. A very high per cent of the population of the Georgia and South Carolina institutions, both white and colored, had pellagra. At that time no case had been seen in St. Elizabeth's and no case in the New York institutions. The dietary of all of the institutions was practically the same. About fifty per cent of the cases in the institutions that had pellagra were brought in with the condition and about half of the cases had developed in the institutions, arguing against the possible assumption that institutions' defective dietary might have been a factor. I maintain that if pellagra was due solely to dietary cause there would have been as many cases in the north and

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east as there were in the south and south-east, all dietary factors in the institutions being the same, and the diet of the contributing general populations not differing materially.

Third:—*Influence of Seasons*:—If pellagra was due solely to dietary cause we should have more cases appearing in the winter than in the spring and summer season. Generally, and particularly among country population, the dietary is more limited in winter and more liberal and more diversified in spring and summer while vegetables and fruits are in season, whereas, we know that pellagra is a spring and summer disease. If a deficient diet was the sole cause we should have the condition more prevalent in winter than in summer. We know new cases do not appear after the first heavy frosts or freezes, as does malaria or yellow fever.

Fourth:—*Severity and Mortality Rate Materially Reduced*:—There is every evidence that the disease has become attenuated, as is the history with known infectious diseases, being extremely fatal and virulent in the early history of pellagra in this country, (1900 to 1910), and either from acquired resistance of the population or from attenuation of infection becoming less virulent as the years pass. We know in the beginning that practically every person who showed the characteristic symptoms of pellagra within the first few years after the sudden advent of the disease would die. The rate of mortality has gradually from year to year reduced until now only a relatively small per cent of the pellagrins die with the disease. All doctors know that this alteration and reduction of mortality rate cannot be attributed to treatment or management, but has come gradually from some unknown diminution of virulence factor.

There are other outstanding evident facts that are not in accord with the dietary theory as a cause. I maintain that the assumption of diet as a sole cause does not explain away the facts outlined above nor does it line up with them.

My complaint in this is that the Public Health Service makes a positive statement as to what is known to be the cause of pellagra, while the facts are that the cause is unknown, and we no more now know the cause of pellagra than we did know the

cause of tuberculosis before Koch discovered the tubercle bacillus, nor than we knew the cause of malaria when it was said to be bad air or polluted water nor than we knew the cause of yellow fever before Reed and his associates made their discoveries. Therefore, it is inconsistent and unscientific to presume to declare the cause of a disease when such cause is unknown.

I am fully convinced that investigation was honestly turned toward dietary study because of the known fact that for weeks, months and sometimes years prior to the appearance of physical signs of pellagra in individual cases there is a mental picture or symptom complex, leading the patient to become apprehensive about what he or she eats, and with the feeling that certain articles of food cause discomfort or trouble, causing the patient to refrain from the consumption of certain articles of diet with a tendency toward longing for and tolerating well the carbohydrates. In other words, the unbalanced diet history in a case, I maintain, is a symptom of pellagra already existing and in no way a cause except so far as malnutrition may be a predisposing cause to pellagra, as it predisposes to all infectious and contagious diseases.

I do not presume to advance an idea as to what is the specific cause, because this is not known; and since the cause of pellagra is not known it would be as unfair to presume a statement as to its cause as it is unfair and unscientific for the school who believe in dietary causes to state positively that deficient or unbalanced diet is the cause of pellagra.

#### CHILDHOOD TYPE OF TUBERCULOSIS\*

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The childhood type of tuberculosis is the term adopted in May 1929 by the American Sanatorium Association to describe the diffuse or focal lesions in the lungs and adjacent tracheobronchial nodes that result from a first infection of the pulmonary tissue with the tubercle bacillus. (Figs. 1 and 2)

The lesion in the pulmonary parenchyma is termed the primary focus or "tubercle of Ghon". (Figs. 1 and 2) The combina-

\*From the State Department of Health.

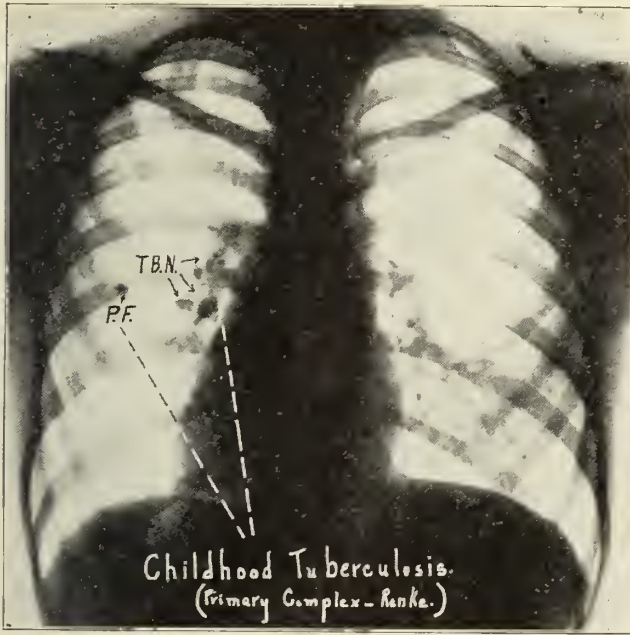


Fig. 1—(Postero-anterior)—Childhood type of tuberculosis showing primary focus (P.F.) or Ghon tubercle and massive involvement of the regional hilum lymph nodes (T.B.N.)

tion of the primary focus and the tracheo-bronchial node involvement is termed the "Primary Complex" after Ranke. (Figs. 1 and 2.) It is primary because of its site of first infection in the body on a virgin soil. Virgin soil means that the way has not been paved by a previous infection; that the body is without certain tissue attributes which will be described later under the term "allergy".

One should bear in mind that a childhood type of infection must always precede the adult form of the disease. Opie in postmortem work finds that apical tuberculosis in the lungs of adults is always accompanied by evidence of pre-existing focal tuberculosis infection of the childhood type. In cases of active pulmonary tuberculosis, he always finds evidence of preceding tuberculous infection. It is this childhood type of infection that paves the way for our breakdowns in adult life.

#### PATHOLOGY

The childhood type of tuberculosis is a primary infection occurring most frequently in children, but may occur at any age in people whose tissues are non-allergic, are not hypersensitive to the tubercle bacillus (tuber-

culo-protein).

In children with non-allergic tissues who are exposed to open cases of tuberculosis and receive enough organisms to produce disease, the infecting bacilli are carried in by way of the inspired air through the trachea, bronchi, and bronchioles to the end alveolus. Here the bacilli are picked up by the alveolar phagocytes (dust cells) and are swept by the lymphatic drainage to the end alveolar duct. The end alveolar duct is a small lymphatic duct which drains the alveolus and sweeps back under the pleura to the regional hilum lymph nodes. Along this duct between the alveolus and the pleura the primary focus develops by a proliferation of monocytes. This type of inflammation we call proliferative or nodular tuberculosis in contrast to the adult exudative or diffuse tuberculosis. This proliferated mass of

monocytes increases to variable sizes (Fig. 3), and finally caseation necrosis takes place in the center of the mass. Following caseation, the collateral inflammation clears and in time calcium is deposited in the caseous center (Fig. 4).

This caseation necrosis is due mainly to

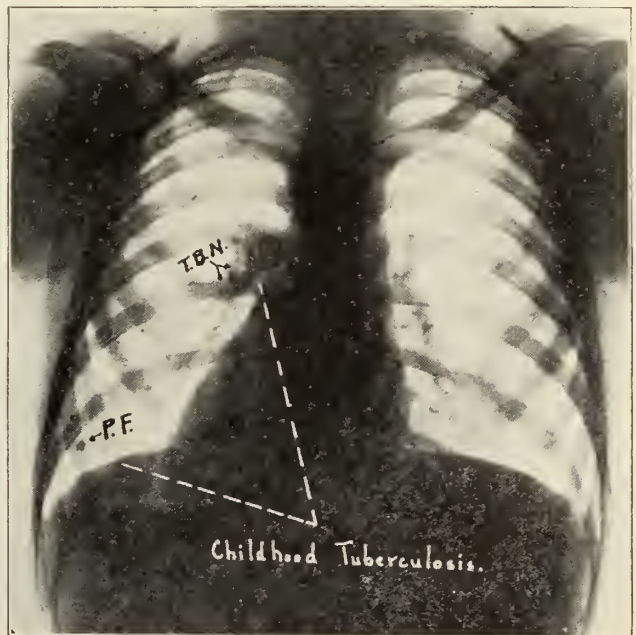


Fig. 2—(Postero-anterior)—Childhood type of tuberculosis showing tubercle of Ghon and massive caseous hilum nodes. (Primary complex of Ranke.)





Fig. 3—(Postero-anterior)—Child, aged 20 months. Tuberculin reaction markedly positive. Mother, a far advanced case. Reveals early heavy infiltration of the childhood type in the right lung field.

the development of allergy. As the proliferation of the monocytes continues, the tissues of the body are gradually becoming sensitive to the tubercle bacillus (tuberculo-protein), and this results in an acute inflammatory response which destroys the diseased tissue (caseation necrosis). This altered reaction we call allergy.

Krause says, "Since the allergic state can come into play within two weeks, more or less, after the first focalization of tubercle bacilli within the body, all later tissue effects must be regarded as having been variably influenced and moulded by allergy."

But not all the bacilli lodge in the subpleural zone. Some are carried by lymphatic drainage to the regional tracheobronchial lymph nodes where the same type of process takes place with subsequent caseation and deposition of calcium. The tracheobronchial nodes, in turn, serve as a filter for tubercle bacilli and in the favorable type of case the bacilli are arrested there. If the infecting dose is large, there may be a spill-over beyond the last tracheobronchial node to the paratrachea lymphatics, the long thoracic and ultimately the blood stream, producing a miliary tubercu-

losis by lympho-hematogenous metastasis. Such a process is usually so rapid that a primary complex is rarely found.

The subpleural location of the primary focus explains the tuberculous origin of many cases of spontaneous pneumothorax by rupture into the pleural cavity. Primary foci are usually single but may be multiple, are found anywhere in the lung field but occur with greater frequency on the right. The frequency of that site is explained by the location of the carina of the trachea to the left and the larger right bronchus.

#### DIAGNOSIS

According to the diagnostic standards of the National Tuberculosis Association, the diagnosis of the childhood type of tuberculosis depends upon the consideration of these factors:

##### 1. History—

Exposure to known cases or people with suspicious symptoms. The intimacy and length of exposure is important.

##### 2. Symptoms—

A. Weight—Tuberculosis may be found in overweight, underweight and nor-

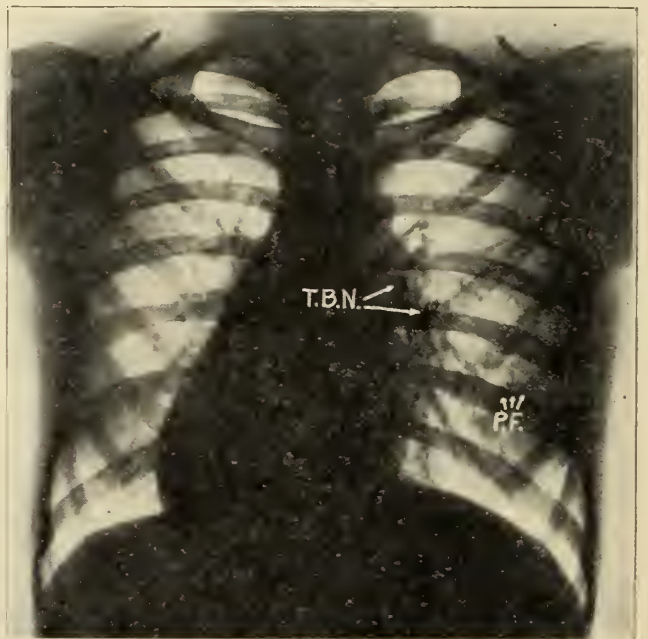


Fig. 4—(Postero-anterior)—Reveals an intermediate stage with beginning healing. Multiple primary foci at right base. Partially calcified nodes in right hilum. Note the woolly indefinite right cardiac margin and the normal left cardiac margin.

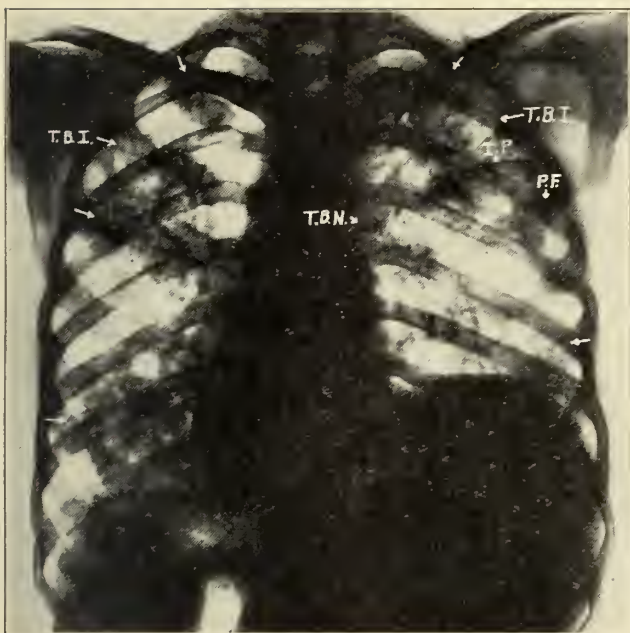


Fig. 5—(Postero-anterior)—Adult with far advanced pulmonary tuberculosis. Interlobar pleurisy on right (I.P.). Evidence of an old childhood type of tuberculosis (Primary Complex).

mal weight children.

- B. Fatigue—Is the most common symptom, often accompanied by loss of strength.
- C. Cough—May or may not be present.
- D. Sputum—Rarely obtained from children and infants.
- E. Fever—Subject to wide variations in the normal.
3. Physical Signs—Very seldom elicited. Eustace Smith's and D'Espine's signs found only when there is marked and massive involvement of the tracheobronchial nodes.
4. Tuberculin Test—Must be positive in order to make a diagnosis. Mantoux test more reliable. 20 per cent fewer reactors with the Von Pirquet test. First dose .01 mg. of O.T. (intracutaneous), and if negative, repeat with 1 mg.
5. X-ray Evidence—Make post-anterior exposure for presence of primary focus or calcified tracheobronchial nodes or both. Oblique view should be taken in all doubtful cases.
6. Laboratory test—See sputum.
7. Exclusion of other causes.

#### TREATMENT

1. Break contact and prevent further exposure to the tubercle bacillus. This is

the most important step in the treatment.

2. Give cod liver oil, viosterol and foods rich in calcium to hasten calcification.
3. Sunlight which also hastens calcification.
4. Tomato juice or orange juice to supply vitamins.
5. Meet the protein requirements.

I. Observation Cases—Prophylactic treatment in well supervised open air or open window schools, preventoria, or summer camps.

A. Cases with small pulmonary or tracheobronchial tuberculous lesions that are becoming calcified. Symptoms absent or ill defined.

B. Suspects—Children who react to the tuberculin test and who show abnormal x-ray densities at the root of the lung, which may be due to caseous lymph nodes but which are not sufficiently characteristic to justify a definite diagnosis.

C. Children who react positively to the tuberculin test, who do not have any x-ray evidence of disease, but who are in poor general health from an undetermined cause.

D. Children who react positively to the tuberculin test, have no x-ray evidence of tuberculosis, and are apparently in good health, but who have been subject to heavy exposure to a source of infection. Also similar cases in which further contact with a pulmonary case cannot be prevented.

II. Manifest Disease—Sanatorium care or its equivalent.

A. Cases with diffuse or circumscribed infiltrations of the lungs (Fig. 3).

B. Cases with uncalcified tuberculous tracheobronchial lymph nodes.

C. Cases with numerous pulmonary tuberculous lesions or large masses of tuberculous tracheobronchial lymph nodes, even if partially calcified (Fig. 1).

#### PROGNOSIS

The immediate prognosis after the age of one or two years is usually good and many



children get well without ever knowing that they had an infection.

The prognosis is grave if the caseous tracheobronchial nodes are enlarged to the point that they can be seen in the x-ray without calcification. (Fig. 2.) The danger in these cases is of rupture into a bronchus, a pulmonary vein or artery, the mediastinum, or of lymphatic spill-over and lymphohematogenous miliary tuberculosis.

Chadwick says, "the greater the primary involvement the more likely an endogenous breakdown which will occur at an early date. (Figs. 1 and 2.)

The future prognosis, unfortunately, is not as good as the immediate. A number of these children break down between the ages of 15 and 35 by the endogenous route. The greatest toll is taken at the adolescent age when twice as many girls break down as boys.

J. A. Meyers and Walter Rathbun found the childhood complex in 50 to 60 per cent of their adult cases of pulmonary tuberculosis. (Fig. 5.) It is estimated that 10 per cent of the childhood cases give us 50 to 60 per cent of our breakdowns in adult life. How many break down by the endogenous route or the exogenous route is a much debated question.

In the face of Meyer and Rathbun's findings and the scholarly work of Opie and McPhedran, any physician will do well to keep under observation during the period of adolescence all children with tuberculosis of the childhood type.

With serial x-ray films of the chest at least once a year at this period and education of the patient along the lines of tuberculosis, the physician should, in this way, prevent or discover cases of the adult type of tuberculosis long before the appearance of symptoms or activity.

## EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS\*

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Before beginning my paper proper I do not think it amiss to make reference to the traveling chest clinics which the State Board of Health has instituted to assist

the practicing physician in arriving at an early diagnosis of pulmonary tuberculosis. These clinics may be obtained in any organized county by an invitation from the county medical society, extended through the county health officer.

Their aim is to afford consultation to the physician in any of his chest cases in which he may desire it. These clinics carry with them an x-ray outfit. Films are taken of those cases in which they are thought necessary to assist in making a diagnosis. All histories, physical findings and x-ray reports are made out in triplicate form. One copy is sent to the physician, one to the county health officer, and one is retained by the State Board of Health. No patients are accepted in these clinics unless referred by their physician or unless they are known by the county health officer to be suspicious cases. In the latter instance, they must give the name of the physician to whom they wish their reports sent. No report or diagnosis is given to the patient, but he is told to return to his physician for a report of his case. In this way, we hope to keep the patient in the hands of his physician or, where not already under the care of a doctor, to place him there where he rightfully belongs. This action is predicated on the realization that treatment is not within the province of the State Board of Health.

It is fully realized by the health department that the practicing physician bears the burden of early diagnosis of pulmonary tuberculosis and it is with the view of assisting that these clinics for consultation have been instituted.

In a limited time, it is impossible to discuss all phases of the early diagnosis of pulmonary tuberculosis. Dr. Ringer, in the excellent paper on this subject which he presented to this Association last year, covered the physical signs and their interpretation so thoroughly that I feel a repetition of these would be "carrying coals to New Castle."

I am more interested in the early manifestations of the disease, when it evidences itself as a general disturbance of the functions of the patient without localizing itself. Tuberculosis is unfortunately a disease which has gained considerable headway from a pathologic standpoint before it can be recognized as a clinical entity. To

\*Read before the Association in annual session, Birmingham, April 23, 1931.

\*From the State Department of Health.

use a familiar simile, it is like an iceberg: two-thirds of it is submerged; only one-third of it obtrudes itself as a clinical disease. Frequently a physician is confronted with signs and symptoms, in no way characteristic of tuberculosis, which indicate a "submerged" pathologic and chronologic process of considerable size. In its earliest phases, tuberculosis may present symptoms so suggestive of other diseases as to require a careful differential diagnosis. Too narrow a specialization may prove a hindrance in the diagnosis of this early stage.

As Dr. Austrian points out, a patient having unexplained fever, lessened physical reserve, gastro-intestinal, respiratory, circulatory, or menstrual disorder may, if seen by a gastro-enterologist, become a gastro-intestinal case; or if seen by a gynecologist, all symptoms may be attributed to the pelvis. A specialist in tuberculosis alone may diagnose the case as one of tuberculosis, when in fact it may be a cardiac case. I do not, as some have done, advocate that every case be considered tuberculosis until proven otherwise, but I do insist, that in any patient presenting symptoms of a chronic disease or some obscure condition, the possibility of pulmonary tuberculosis be considered along with other diseases less serious in their consequences. It is well recognized among the profession that with any acute pain, severe enough to require an opiate, the use of morphine is better deferred until a diagnosis is made. I believe that any patient whose symptoms are sufficient to make him seek a doctor should be diagnosed before a tonic is given for his so-called "run down condition." In a large majority of cases this is not the physician's fault. How many times have you heard this appeal? "Doctor, I'm run down and want a tonic to build me up. I haven't time for you to examine me; just give me a tonic." The patient departs, secure in the belief that the tonic will "build him up". Six months later he is blaspheming the doctor for not diagnosing a far advanced case of tuberculosis.

The careful recording and collation of a history is probably more useful in assisting in the early diagnosis of pulmonary tuberculosis than in any other disease. History of a prolonged exposure in childhood or early adult life immediately places one

on the lookout for future clues in this direction. Lawrason Brown groups his symptoms into two classes: (1) general as fever, rapid pulse, loss of weight and strength, and nervousness; and (2) the localizing symptoms as cough, sputum, hemoptysis, dyspnea, and pain in the chest. The general symptoms are valuable in indicating the severity of the disease while the localizing symptoms point to the site of the trouble.

The coughing up of blood is extremely suggestive of tuberculosis; cardiac disease, bronchiectasis, lung abscess, and new growth being among the chief conditions to be ruled out. Fever is, of course, important but a rapid pulse persistently present, even in the morning when there is no fever, is a strong indication that there is trouble. With a rapid pulse, loss of weight and strength, accompanied by nervousness, the picture is complicated by thyrotoxicosis. Especially is this true if a palpable thyroid is present. A not infallible but simple differential point is, that in tuberculosis the loss of weight is accompanied by a loss of appetite, while in thyrotoxicosis the appetite is either normal or increased with the decline of weight. A basal metabolism test will solve the problem as it is usually normal in tuberculosis when the temperature is not elevated.

Pleurisy with effusion, from no apparent cause, is in a large majority of cases tuberculous in origin. It frequently occurs as the first symptom before there are any other signs of tuberculosis. Laboratory examination of pleural fluid is most valuable; a culture may give positive evidence. If the fluid gives no growth it is very suggestive of tuberculosis.

Whenever what seems to be an ordinary acute respiratory infection leaves, as a residual symptom, a cough that persists more than a month, disease of the lungs must be considered. One of the usual modes of onset of tuberculosis is with a cold, so-called. Cough has long been considered a cardinal symptom of tuberculosis. It is almost always present even in the very early stages of the disease, but, because it is so well recognized as a symptom of tuberculosis, patients will deny its presence in order to reassure themselves. A dry hacking summer cough should be carefully investigated.



Vague gastro-intestinal disturbances are most frequent and may be the only symptom of which the patient complains. Why gastro-intestinal disorders should occur so frequently I do not understand, but where primary disease of the gastro-intestinal tract can be excluded it is an important symptom of tuberculosis.

The majority of mistakes in not diagnosing pulmonary tuberculosis early enough arise, I think, from the failure of the physician to give proper consideration to the symptoms presented to him. Tuberculosis is not an extremely difficult disease to diagnose, if carefully searched for. The ear of the general practitioner may not be attuned to slight changes in the breath sounds, but he need not feel that that excludes him from diagnosing an early case of tuberculosis. The physical signs in pulmonary tuberculosis may or may not be present with the symptoms. Occasionally lesions of considerable extent do not give any physical signs.

One must not allow himself to become discouraged when he carefully checks his work with the x-ray. Lesions will be found by the x-ray which the clinician feels he should have discovered on physical examination. Physical findings may be negative while x-ray plates show definite lesions. Occasionally, the reverse will be true: the physical findings will show rales on repeated examination while the x-ray will be negative. Symptomatology and repeated examinations must decide the activity of these cases. No single sign is diagnostic of tuberculosis, but the consensus of opinion is, that, by far, the most constant and significant sign is a shower of medium moist rales heard constantly over one or the other apex, in the first or second interspace, or above the spine of the scapula with or after expiratory cough. A word should be said about eliciting the expiratory cough, which is a most valuable aid. The patient should be instructed to take a deep breath, exhale and, just as the last bit of breath has left the lungs, a slight cough should be forced to push out the residual air. A deep inhalation should follow this and it is with this intake of air that we most frequently detect the rales. The difficulty in getting a patient to follow these instructions is often repaid by the valuable information obtained. Gen-

erally speaking, rales in the lower third of the chest with the rest of the lung fields clear are apt to be due to some condition other than pulmonary tuberculosis. It is not my intention to dwell upon the physical signs of pulmonary tuberculosis. They are well known to you and little can be said to assist in eliciting them.

Laboratory diagnosis of tuberculosis, like signs and symptoms, cannot stand alone. Dr. Allen K. Krause says: "No laboratory procedure can at present carry the whole load in the positive diagnosis of pulmonary tuberculosis." He goes so far as to say that not even the finding of tubercle bacilli in the sputum can be considered as condemning the patient, unless signs and symptoms are compatible. These are isolated cases. I believe from a general standpoint we can say that the finding of tubercle bacilli in the sputum on two examinations is sufficient evidence upon which to make a positive diagnosis. Negative sputum, on the other hand, in no way influences the diagnosis. In the presence of clinical signs and symptoms, twenty negative sputums should not change us in our belief that the patient has tuberculosis. I am not depreciating the examination of sputum, because, I think that any case of pulmonary tuberculosis, traversing a long period of clinical activity, will show tubercle bacilli in the sputum. I am merely making a plea that the laboratory be given a fair opportunity to find the bacilli.

A much neglected diagnostic aid is the tuberculin test. It is not true that all adults react to tuberculin. A certain number do not, and this number is increasing. Krause points out that "tuberculin testing is the only procedure which unassisted, can settle a diagnosis of tuberculosis." Let me explain: A negative tuberculin reaction means that the patient has no active pulmonary tuberculosis. A positive tuberculin reaction gives no aid in diagnosis since it merely signifies a lesion, past or present. It is equally as important to know that a patient does not have tuberculosis as to make a positive diagnosis. There are other laboratory aids in diagnosis, as the fixation test and the sedimentation rate, but these are still too hypothetical for universal use. The blood count can be of service in eliminating leukemias, primary anemias and other hematogenous diseases.

Krause suggests that severe or rapid anemias lead one to think of malignant tumor rather than tuberculosis.

Certainly the laboratory cannot serve to lessen the responsibility of the clinician a great deal. The laboratory occupies a place of less importance in the diagnosis of pulmonary tuberculosis than in that of almost any other disease.

We now come to the question of the x-ray film in the diagnosis of tuberculosis. With the improvement of technique in the actual films and the correlation of x-ray findings with anatomical changes, it has increased in importance. There comes a time in the differential diagnosis of the disease when an x-ray picture is absolutely indispensable. The committee of the National Tuberculosis Association outlines the value of the x-ray thoroughly in the following points:

1. It is a valuable control of the accuracy of the data furnished by other means of physical examination, and thus furnishes an appraisal of the utility of these methods.

2. It serves accurately to locate, outline and determine the extent of foci of the disease.

3. It may disclose a casual focus in patients in whom physical examination fails to discover it because of its inaccessible location or because it is masked by other conditions.

4. It gives a graphic record, so that the advance or retrogression of the pathologic process may be followed accurately.

I do not feel that the x-ray should bear the entire burden of diagnosis. It must form an appropriate part of the composite picture of the disease. Experience and skill are necessary in the reading of x-ray films, but a poor radiograph may place both at a total loss. A clear, sharply defined film renders the task much easier and more accurate. Over enthusiasm for radiographs may lead to too fine an interpretation of minute shadows and markings.

May I again quote Austrian? He says: "It is the consensus of opinion that infiltrative foci within the upper third of the chest, above the third rib and third dorsal spine, are usually of tuberculous origin; whereas, changes in the basal zones that are not in continuity with those in the upper thorax or that become less marked

there are generally considered of non-tuberculous causation."

As I stated in the beginning I have made no attempt to deal exhaustively with this subject of early diagnosis of pulmonary tuberculosis, but have attempted to touch upon some of its more neglected points as I have observed them. I hope I have emphasized these facts:

1. Tuberculosis is a problem of general diagnosis requiring the skill of a good doctor rather than the one-sidedness of a specialist.

2. Tuberculin testing in the adult is a much neglected and valuable aid in diagnosis.

3. Negative laboratory findings cannot in any way compare in importance with clinical observation.

4. The x-ray is in no way the most valuable link in the chain of diagnosis.

5. The physician, having his evidence in hand, must be his own judge. Neither laboratory nor x-ray should make a diagnosis.

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## THE HOME TREATMENT OF PULMONARY TUBERCULOSIS\*

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A brief review of the present treatment of pulmonary tuberculosis may properly preface the consideration of those phases of the disease and types of patient that can be treated successfully in the home.

Despite the ardent hopes and arduous efforts of many scientific workers neither serotherapy nor chemotherapy has contributed to tuberculosis anything comparable to Von Behring's and Wernicke's antitoxin in diphtheria or Ehrlich's arsphenamine in syphilis. Though these fields and others are being extensively exploited, modern treatment follows the lines inaugurated by Brehmer, Detweiler and Trudeau, and may be called supportive in that it rallies and reinforces the powers resident in the patient rather than attacks directly the microbic cause of the disease. Dr. Allen K. Krause has written a book called, "Rest and Other Things." The title of this book

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\*From the State Department of Health.



not only describes in epitome this treatment but evaluates the therapeutic agencies used. The false emphasis placed upon climate, feeding, drugs, etc., persists so long as results derived only from rest are ascribed to other agencies which are, indeed, of tremendous importance but still are secondary. Dr. James Alexander Miller says: "Rest is the most essential single item in the treatment of active tuberculosis. . . The predominating importance of the factor is far too little appreciated." Dr. H. R. M. Landis says: "The most essential fact, namely the importance of rest, has been the one that has gained acceptance but slowly, and even now its importance is far from being realized by many." Dr. Lawrason Brown says, "A thesis might be successfully defended which states that in proportion as any part of the body afflicted with tuberculosis can obtain complete rest so it can be cured speedily and surely." So much in an authoritarian fashion.

Let us consider the pathologic basis for this position: In the childhood type of tuberculosis, that is in first infection, extension from the primary focus to the tracheo-bronchial glands is by way of the lymph ducts. Further extension occurs not by continuity through the gland capsule but by metastasis along the ducts and thence into the circulation. In adult tuberculosis, or reinfection, extension comes about in three ways. (1) A tubercle softens and ruptures into a bronchus and bacilli are swept by the air current, the action of cilia, and bronchial peristalsis on to new sites of activity. (2) A tubercle ruptures into a blood or lymph vessel and bacilli float out and reaching the blood stream are conveyed to distant tissues. (3) Finally bacilli may be carried from a tubercle whose fibrous investment is pervious by migratory phagocytic cells. Tubercle bacilli are not motile. They are either swept along airways or float along fluid channels or taxi through the tissues in macrophages or other phagocytic cells. They do not readily remove from a tubercle whose fibrous investment is compact or whose caseous material is dry and intact. Extensive involvement occurs only as a result of metastasis. This is of course a truism but may serve for emphasis.

The human body defends itself against tubercle bacilli mainly in two ways. It

either destroys or encysts them. Now the prevention of the movement of those bacilli that the body cannot kill is a major aim of treatment as we cannot aid their destruction by any serotherapy or chemotherapy at present.

Clinical disease is almost entirely an expression of the reaction of various sensitized tissues to the decomposition products of the bacilli, that is to say tuberculo-protein, and a "probable autotoxemia from the broken down tissue cells undergoing autolysis." There may be extensive anatomical disease and very little clinical disease, or there may be inextensive anatomical change and marked illness, depending upon the allergic sensitiveness of the tissues and the diffusion of tuberculo-protein which results from flushing the area of disease. This flushing is related to the energy of the lymph movement, which in turn parallels the activity of the circulation.

Now we may turn our attention upon the effects of rest on those processes by which anatomical disease is extended and clinical disease produced. When the body is at rest in the recumbent position, metabolism is reduced to the vegetative needs of the body, hence the oxygen-carbon dioxide exchange is at its lowest point and the lung movement and consequent stretching of the diseased tissue at a minimum, thereby reducing the danger of rupture of a caseating focus into a bronchus or blood vessel. Furthermore should rupture occur, the air movement in the bronchi is not energetic and the bacillary debris may not be widely distributed in the air passages. Gardner says: "Bronchogenic dissemination plays a dominant role in the more severe and fatal extensions of tuberculous disease in the lungs." But the volume and pressure of circulating fluids in the diseased area is also reduced by rest. By reason of the less energetic lymph flow there is lessened danger of softening and so of rupture of caseating foci; the fibrous investment of foci is not loosened with resulting migration of bacillus-carrying cells and diffusion of tuberculo-protein causing disturbance of function; and the occurrence of hemorrhage, whose main danger usually is spread of disease, is reduced. Rest further aids the body by favoring fibrosis

which constitutes the aim and announces and warrants the end of treatment.

Now the completeness and the duration of rest must be determined by the anatomic and physiologic situation. In general the rest must approach complete immobilization of the whole body when the disease is acutely active and spreading. Reduction of rest must always be gradual and only after subsidence of symptoms and stabilization of the anatomic process. So long as bacillary sputum, excess of rales, rise of temperature, acceleration of pulse, underweight, increased sedimentation, unfavorable monocyte-lymphocyte ratio, and changing densities revealed by serial x-ray persist so long must we regard the disease as active and so long must our prescription of rest be commensurate with the state and extent of this activity. Dr. McPhedran writes, "Elevation of temperature and of pulse on which is based the current generally accepted conception of activity are dependable only in that they usually indicate an acceleration, intensification, or extension of the existing disease process. Like rales and symptoms they neither herald the onset nor by their disappearance signalize the termination of progressive infiltration and excavation. A lesion far advanced in classification may develop without such reflection in temperature or pulse as will warn and so protect the patient from a disastrous disability that only too often involves a fatal termination." Dr. Hillary says: "I do not think it amiss to point out the error that is responsible for failure in nine out of ten otherwise curable cases, namely, exercise." In Dr. Lawson Brown's opinion it takes three or four years to cure a case of tuberculosis. Perhaps the failure to realize this in large measure accounts for the fact that, after five years, of patients discharged from our sanatoria, twenty-five per cent of those with minimal disease, fifty per cent of those with moderately advanced and seventy-five per cent of those with far advanced disease are dead.

But the rest which constitutes our main resource in the treatment of tuberculosis is not accomplished by merely putting the body in the recumbent position and restricting its movement. Rest must include the mind. Mental excitement, emotional activity, necessarily have extension and re-

flections in the lungs, circulation, nervous and digestive systems which negate the effects of muscular rest. The institution and maintenance of such rest of mind and body tax and test the character of physician and patient.

The second member of the therapeutic triad commonly mentioned is fresh air or the open air. Wherein lies the virtue of the open air? Of course it goes without saying that the air must be free from injurious gaseous or particulate contamination. The virtue of any given air lies, however, in its physical properties of motion, cold and humidity, rather than in its chemical character. "Man's sense of comfort depends on the combined effect of temperature, relative humidity and motion of the air, and on the temperature of the increasing surfaces of his environment." The same "effective temperature," as it is called, may be obtained at different heat levels by varying the humidity and motion of the air. After purity of the atmosphere, comfort in the open air is the important consideration. Now the means of making patients comfortable in most climates are available. Some degree of heat and humidity can be compensated by giving freedom or impulse to the air currents, combined with removal of covering which prevents evaporation, and diet regulation. A hot moist atmosphere depresses the bodily functions. Winds and draughts must be avoided. Cold is stimulating. Even in Northern climates patients put on weight in winter and feel better. Most patients can be comfortable at very low temperatures if properly prepared. Some—the old, the ill, the debilitated—can not and should not be subjected to temperatures in which they are physically uncomfortable. Mental discomfort should be overcome.

Such benefits as derive from altitude are probably due to the cold and dryness of high altitudes. The increase in hemoglobin and red blood cells physiologists regard as compensation of the lowered oxygen tension. This and the lowered atmospheric pressure are said to be undesirable in cases with dyspnea, in hemorrhagic cases, and in high strung temperaments as they increase the nervousness of the latter cases. Dryness of climate is thought to favor the decrease of bronchial secretions. Sunshine has a psychic effect greatly to be desired



as cloudiness is depressing. Glare is always to be avoided. But the heat rays of the sun, except in moderation and as they promote comfort are detrimental. The chemical or actinic rays, while useful in glandular, intestinal, laryngeal, cutaneous, and bone tuberculosis, are harmful in pulmonary tuberculosis, except in a very limited group. Pulmonary tuberculosis is being treated in a wide variety of climates with approximately equal success. Dr. Landis says: "One can state without fear of contradiction that there is no climate that exerts any special beneficial effect on the tuberculous patient."

Food is commonly named third in the order of remedial requisites. Since very early times special diets have been recommended for the tuberculous. "Pliny prescribed a menu of wolves' livers suffused with lukewarm wine, bear's gall with honey and the ashes of bull horn tips." Rather recently the Gerson diet has been recommended by Sauerbruck, Baer and Hermansdorfer, but the experience of other observers in this country and elsewhere has not confirmed their claims in pulmonary tuberculosis.

It is perhaps proper to say that there is no special diet for the tuberculous, except a well-balanced diet with sufficient calories, high vitamin content, ample ash, and adequate roughage of proper kind. Nevertheless a radical change has come about in diet in tuberculosis in the last decade. Hyperalimentation is now taboo. Stuffing patients is generally condemned. Dr. J. B. Hawes, Jr., gives the result of his diet questionnaire addressed to forty or fifty well known specialists as follows:

Unless the patient is underweight or presents some other dietary problem, he is better off by adhering to three good meals a day. The majority were against egg-nog in any form at any time. Practically all were in doubt about the value of raw eggs. Dr. Chadwick advised against more than two eggs a day, raw or cooked. It is said that the egg white is more digestible cooked than raw. The majority opinion was in favor of giving three or four glasses of milk daily to tuberculous patients, with and rarely between meals. The consensus of opinion was that constipation should be handled by a diet of fruits and vegetables, when possible, with help in the way of simple

laxatives occasionally. Five or six glasses of water daily with or between meals is advisable in every case.

To recapitulate: Only three meals a day except under special circumstances; no lunches; not more than four or five glasses of milk and two or three eggs, preferably cooked; fruit and vegetables to correct constipation; and about six glasses of water;—these constitute the dietetic ideals of to-day.

A sufficient number of calories to bring the body gradually to and a little beyond the usual weight and maintain it there is the quantitative standard. "Excessive caloric intake burdens the pulmonary mechanism with additional oxygen-carbon dioxide exchange, thereby preventing functional rest. Accordingly the optimum caloric intake should be about fifty calories per kilogram." "The wasting in tuberculosis involves a parallel demineralization. Hence the dietary must be rich in base-forming salts. The past ten years revealed the effectiveness of ultraviolet energy in the healing of intestinal tuberculosis, the mechanism of which is related to vitamin D, the body product of ultraviolet irradiation. Furthermore the accelerating effect of this vitamin on the calcium absorption in the intestinal tract and its subsequent assimilation have clarified the understanding of the healing mechanism. McConkey and Smith observed the healing of intestinal tuberculous ulcers following the simple administration of cod liver oil and tomato juice, rich sources of vitamin A. B. C. and D." In view of the fact that there is intestinal tuberculosis in about fifty to eighty per cent of cases of pulmonary tuberculosis the importance of the foregoing is obvious. The cod liver oil-tomato juice regimen is routine at Raybrook for all patients who have a high Gaffky. The incorporation of these dietetic principles in a menu that pleases the patient taxes the ingenuity and skill but abundantly repays the effort.

*Drugs.* There are no drugs that have a specific effect in tuberculosis. A word, however, may not be amiss. Cough is common and sometimes an intractable feature of tuberculosis. Opium derivatives, however, must not be used with the freedom allowable in acute diseases. Cough can usually be managed successfully by rest, self-control, and sedative preparations containing codeine in small quantities. Hy-

drocyanic acid is often a useful addition. Cough in excess of what is necessary to remove lung garbage must be controlled as it violates lung rest. Calcium chloride intravenously often gives marked relief in the pains of intestinal tuberculosis. Many medicaments may be employed at different times with comfort to the patient, but the patient should be dosed as little as possible.

*Surgery.* The surgical treatment of tuberculosis is the most important advance since the introduction of the rest treatment. Surgical treatment is, indeed, but a modality of rest. Three operations are commonly used at present: pneumothorax, phrenic-exaeresis and thoracoplasty. Only the most general account of the indications for each procedure is possible here. Where bed rest is insufficient to stay the progress of the disease, or where there is menacing cavity formation or uncontrollable hemorrhage, pneumothorax must be tried; provided, the better lung is not extensively involved and can bear the added burden of respiratory functioning, and there are no non-tuberculous complications such as mental disease, diabetes, etc. If, because of adhesions, pneumothorax cannot be successfully instituted, stringy adhesions may be severed by the Jacobaeus method, or phrenic-exaeresis, with consequent paralysis of the hemidiaphragm, may be resorted to. Where collapse is impossible or if effected is inadequate, thoracoplasty is the next recourse, either partial or complete, and done in two or more stages.

We now come to the application of the foregoing principles to the treatment of patients in the home. Quoting Dr. Landis again, we may say: "The essential principles of treatment of tuberculosis in the home differ in no respect from those in a sanatorium." "The home-hospital experiment carried on in New York City, as well as the experience gained in countless individual cases, has shown that it is far cheaper to care for the family as a unit than it is to send the wage earner, for example, to a sanatorium and maintain the family at home." Not many states have attained the ideal of one sanatorium bed per death. In Alabama this would mean 2300 beds and then only one case in ten would be provided for. So it is clear that the majority of cases must be treated at home, if at all. Home treatment is especially appropriate

for cases in far advanced stages for whom nothing can be hoped by sending them away; for those who refuse to leave home, and for the very poor whose treatment and whose dependents must be provided for by public funds. The National Tuberculosis Association names as a condition for home treatment that there be no children in the home who might be exposed to the disease in open form. This proviso, of course, entails public provision for the children in special establishments.

Informed opinion is almost consentient in affirming that a short period of sanatorium treatment for the purpose of instruction of the patient is desirable. Hospitalization for progress and problem diagnosis and special treatment is indicated at times. Successful treatment depends on willingness and intelligence on the part of the patient in carrying out instructions, the possession of sufficient resources and a proper environment. The term proper environment includes not only the material necessities but a personnel that can understand the demand for sanitary precautions; and even more the need for persistence in the cure when cessation of cough and expectoration, freedom from conscious ailment, and a return of well-being apparently indicate the termination of the disease and warrant the discontinuance of treatment.

The most important and decisive factor in successful treatment is competent medical supervision. Dr. Landis expresses the opinion that, "medical supervision is probably more essential than anything else." Perhaps no disease imposes a more formidable task upon the physician. The original recognition of the disease, the knowledge of its pathologic patterns and behavior, varied clinical manifestations, radiologic expressions, frequent complications, deceptive recoveries; the control of the patient's movement of mind as well as body; the inspiring of confident cooperation on the part of the persons who environ him so as to secure cheerful persistence in the cure when the need for it seems long past or when the hope of benefit from it seems futile; and the rewards of long and faithful compliance are swept away by the event of some disastrous moment;—these combine and conspire to magnify the difficulty of the task.



Nevertheless this is the task which some 25,000 tuberculous persons in the State impose upon the members of the Medical Association of the State of Alabama.

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### ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF PULMONARY TUBERCULOSIS\*

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#### HISTORY

Treatment of pulmonary tuberculosis by collapse or compression of the diseased lung has evolved over a period of approximately one hundred years. Originally conceived as an abstract idea and proposed on purely theoretical grounds, it has now become a practical procedure generally recognized as being of the greatest value in the treatment of tuberculosis of the lung.

James Carson, of Liverpool, in 1821, observed in animal experimentation that the lung collapsed when the pleural cavity was opened to the air. He suggested that such collapse of the diseased lung might be of benefit in cases of pulmonary tuberculosis in man.

Houghton, in 1832, reported marked clinical improvement in an advanced case of pulmonary phthisis, following the occurrence of spontaneous pneumothorax. Trousseau, observing similar cases, in 1880, sug-

gested the use of artificially induced pneumothorax in advanced cases of pulmonary tuberculosis, thus reviving the idea which had long lain dormant. Potain, in 1884, is credited with being the first, actually to treat a case of tuberculosis with artificial pneumothorax. He withdrew fluid from the chest of a tuberculous patient and injected sterilized air in its place. Later, he treated two other cases and noting improvement reported all three in 1888.

Carlo Forlanini is now generally regarded as the real father of pneumothorax therapy. In 1888, he began the actual, deliberate collapse of the tuberculous lung by the introduction of nitrogen gas into the pleural space. He reported two cases, thus treated, in 1894. He continued his work and published the results of his treatment in 1906. This at once arrested the attention of phthisiotherapists, especially in Europe, and the subject soon became one of great interest to those engaged in the study and treatment of tuberculosis. Saugman combined the pressure instrument with a manometer for gauging the intrapleural pressure in 1908. From then on, improvement in technique and a broadening knowledge of the applicability of the method has won for it recognition as the greatest advance made in the treatment of tuberculosis since Dettmeiler placed rest therapy on a true scientific basis, over fifty years ago.

Strange to say, pneumothorax therapy was comparatively slow in gaining recognition by the medical profession of this country. The method was first used in the United States by John B. Murphy of Chicago, in 1898. He opened the pleural cavity by incision and induced complete collapse of the lung, but made no effort to maintain the artificial pneumothorax by subsequent refills. In 1912, papers on artificial pneumothorax were read before the National Tuberculosis Association at Washington, D. C., by Drs. Sloan, Hammon, and Lapham. Following this the method came into fairly common use at sanatoria for the tuberculous and among phthisiotherapists in the country at large. It now enjoys an accepted and important place in the treatment of pulmonary tuberculosis throughout the world.

#### BASIC PRINCIPLES AND MECHANICS

In order to fully appreciate and intelligently employ the principles of pneumotho-

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rax therapy, it is necessary to have a clear understanding of the basic anatomy and physiology of the chest.

The volume of the thoracic cavity is alternately increased and diminished during the respiratory cycle due to the action of the accessory respiratory muscles and the piston-like movement of the diaphragm.

The lungs are composed largely of elastic tissue and constantly exhibit an inherent tendency to contract away from the periphery toward their roots in the direction of the mediastinum.

The intrapleural space is that space which exists between the parietal pleura, lining the inner aspect of the chest wall, and the visceral pleura which covers the lung. Normally, the two pleural surfaces are for the most part in contact and glide smoothly upon each other during respiration. The intrapleural space is thus, from a practical standpoint, a potential rather than an actual space. It has long been known that a negative pressure exists in the normal intrapleural cavity. This negative pressure is created largely by the elasticity of the lung which causes that organ to constantly pull away from the chest wall. The negative intrapleural pressure measures about  $-5$  mm. Hg. in expiration and is increased on inspiration to approximately  $-10$  mm. Hg. These changes in intrapleural pressure are much more pronounced under abnormal conditions such as forced, labored respiration, coughing, sneezing, etc.

In the normal chest, the lungs are expanded due to the force of the atmospheric pressure acting through the trachea and bronchi. If air or gas be introduced into the chest, between the layers of the pleurae, the pressure tends to become equalized outside and inside the lung and that organ contracts and remains collapsed by virtue of its own elasticity.

Granting that the lung can be compressed and collapsed by the reduction or destruction of the negative intrapleural pressure, the question arises as to how this may be of benefit in pulmonary tuberculosis. It is well recognized that rest is the most important thing in the treatment of this disease. The lungs are never at rest, under ordinary conditions, but are constantly expanding and contracting at the rate of about 25,000 times during the 24

hours. This degree of activity is, of course, much increased in the presence of active pulmonary tuberculosis. Immobilization of the lung by an artificial pneumothorax puts it at rest as effectively as a splint rests and protects a broken bone.

Compression of the lung, in addition to putting the diseased organ at rest, squeezes out pus and other detritus in cavities and in the inflamed alveoli and bronchioles, thus removing the main sources of toxin absorption. A slight passive hyperemia is also brought about in the collapsed lung, which is an important defense of the tissues against the tubercle bacillus. The lymph channels are collapsed and as a result absorption of toxins is much impeded. Hemoptysis due to pulmonary hemorrhage is also controlled by the compression. Atelectasis is induced by the collapse, which, in normal pulmonary tissue, may be maintained indefinitely without prohibiting functional re-expansion, but which in tuberculosis promotes healing due to the formation of fibrous connective tissue in the apposed diseased parts. Re-expansion of the affected area is prevented by the firm cicatrization. Thus, we accomplish quickly from without what nature slowly labors to do in all cases of pulmonary tuberculosis from within the lung, i.e., the encapsulation and fixation of the involved area by the formation of fibrous tissue.

#### INDICATIONS FOR PNEUMOTHORAX THERAPY

As the practice of artificial pneumothorax treatment has grown and developed, experience has taught the wisdom of the proper selection of cases for this form of therapy. Although each individual case must be judged on its own merits, and although the opinion and teachings of many phthisiotherapists vary somewhat as regards the exact type of cases selected for treatment, there are certain broad and general rules to which it is wise to adhere in determining whether or not a case is to be treated by pneumothorax.

In general, pneumothorax treatment is indicated in the following conditions:

1. Moderately advanced, or extensive, unilateral pulmonary tuberculosis which has had a fair but unsatisfactory trial of conservative treatment, and which is asso-



ciated with little or no involvement of the contralateral lung.

2. Cases of hemoptysis, where the condition of the contralateral lung is not such as to contraindicate collapse therapy.

3 Acute pneumonic tuberculosis involving one lung.

4. Chronic bilateral tuberculosis which has resisted all conservative treatment.

The ideal condition for pneumothorax treatment is a unilateral lesion that has not shown any tendency to heal under proper bed rest and other forms of conservative treatment. Artificial pneumothorax should be instituted as early as feasible in such cases especially in the presence of cavity formation which has not shown any tendency to heal.

Pulmonary tuberculosis follows a well recognized and definite course. It begins on one side, usually in the apex of the lung; sooner or later the opposite lung becomes involved; but it behooves us to remember that every case of the disease at one time passes through a stage when it could be cured or greatly benefited by artificial pneumothorax.

Once it has become apparent that the ordinary regime of rest, fresh air and good food will not be sufficient to bring about a cure, the diseased lung should be collapsed by means of artificial pneumothorax. All too often, too much valuable time is lost in procrastinating in such cases. Months and years are sometimes allowed to pass in hopeless temporizing when collapse therapy is indicated. As the disease advances, the chances of a successful collapse of the lung become impaired, because of the development of pleural adhesions and extension of the disease in the better lung.

From the strictly pathologic standpoint, it is very rare indeed to find any considerable tuberculous disease in one lung and none in the other. However, moderately advanced cases which are unilateral from the clinical standpoint are not infrequently met with, it being estimated that about 10 per cent of all cases of pulmonary tuberculosis seen by the clinician fall into this classification and are thus ideally suited for pneumothorax treatment.

In most cases treated in actual practice by artificial pneumothorax, there is some clinically demonstrable involvement of the contralateral lung. Inability to foretell

with absolute accuracy whether the disease which exists in the "better" lung will improve or get worse after collapse of the "worse" lung constitutes the most difficult problem in the selection of cases for treatment. Most clinicians of large experience agree that if tuberculosis is present in the contralateral lung it must be only of small extent, involving not more than one-third of the lung and being limited to the upper lobe. Basal lesions and cavitation of the contralateral lung contraindicate collapse therapy. There is an increasing tendency on the part of phthisiotherapists to employ pneumothorax treatment in cases of patients whose better lung is the seat of active tuberculous disease. The various types of contralateral lung lesions vary greatly in their prognostic significance. Exudative, fibrocaseous involvement limited to the upper lobe offers a far better outlook than cavitation, or bronchogenic extensions into the lower portion of the lung.

Pneumothorax is often of great value in the control of pulmonary hemorrhage occurring in the course of chronic phthisis. It acts by compressing the bleeding point or vessels supplying the involved area. In such cases, artificial pneumothorax should be resorted to early before there is serious loss of blood and the patient is in bad condition. The most important consideration of course, is to determine which lung is in the site of the hemorrhage. Much valuable information can be obtained from the patient himself, who often confidently and positively indicates the site of the hemorrhage because of certain subjective phenomena he experiences, commonly described as a rattling or fluttering. When there is grave doubt as to the location of the bleeder, an x-ray picture should be made if possible. The bleeding cavity presents a very dense shadow due to the contained blood. If previous films are available for comparison, the difference in appearance is very striking.

Acute unilateral pneumonic tuberculosis requires prompt action. In the early stages of this condition pneumothorax therapy may be most effective. The outlook is not good under any circumstances, but compression treatment in the early stages gives more promise than mere rest.

In advanced cases of pulmonary tuberculosis, collapse therapy is occasionally at-

tempted as a last resort. For the most part it proves ineffectual, but occasionally it is attended by surprisingly brilliant results. At times even in far advanced bilateral tuberculosis, collapse of the worst lung, thus removing the main source of toxin formation, brings about cure of the less involved lung by enabling the lesser lesions to utilize the whole of the body's resistance for recovery. Such a favorable outcome is the exception rather than the rule, however, and advanced bilateral cases are generally unsuited for collapse therapy.

#### CONTRAINDICATIONS TO PNEUMOTHORAX THERAPY

The indications and contraindications for treatment by artificial pneumothorax are for the most part relative, as can be easily appreciated, and are difficult to define dogmatically. However, the method should not be attempted in impossible or hopeless cases, as such a policy inevitably brings undeserved discredit upon a valuable therapeutic procedure.

There are certain conditions which, in the opinion of most clinicians, constitute absolute contraindications for artificial pneumothorax. Chief of these are:

1. Extensive tuberculous involvement of the better, or contralateral, lung, especially cavitation or lesions involving the basal portion of the lung.

2. Advanced tuberculosis with pleural adhesions extensive enough to prevent satisfactory compression.

3. Miliary tuberculosis.

4. Tuberculosis associated with serious disease of the heart, especially of the right side, in which dyspnea and cyanosis are present.

5. Tuberculosis of the lung complicated with bronchial fistula.

6. Patients who are unwilling or unable to cooperate fully throughout the entire course of treatment.

Pleural adhesions are present in approximately one-half of the cases in which pneumothorax treatment is indicated. However, in about 40 per cent of cases exhibiting such adhesions, a satisfactory pneumothorax can be established. In a like number of cases, adhesions will prevent the necessary collapse or compression necessary to provide adequate functional rest

or closure of cavities. In the remaining 20 per cent of cases, pleuritic adhesions are so extensive as to prevent the introduction of air or gas into the pleural space. Thus, pneumothorax therapy is impossible due to pleural adhesions in about 30 per cent of cases wherein it is otherwise indicated. In some of these cases, section of adherent synechial adhesive bands through the thoracoscope may sufficiently mobilize the lung to enable pneumothorax treatment to be effective.

Serious heart disease, associated with dyspnea and cyanosis, prevents the establishment of artificial pneumothorax due to the added strain which collapse of one lung places on the right heart. In left sided pneumothorax trouble is sometimes encountered due to pleuropericardial adhesions pulling on and embarrassing the heart following the introduction of the gas.

Thoracoplasty should be advised in every patient with persistent bronchial fistula, as soon as the diagnosis is apparent. These cases usually develop a pyopneumothorax which, as a rule, is rapidly fatal and are not favorably influenced by pneumothorax treatment.

One of the requirements for the successful treatment of pulmonary tuberculosis is whole-hearted cooperation on the part of the patient. There is probably no disease in medicine, with the possible exception of diabetes, where it is as necessary for the patient to have such a full and intelligent understanding of his condition and to be as willing and anxious to cooperate with his physician throughout the entire course of treatment. Patients, who, through ignorance, stupidity, timidity, or poverty, are not likely to render such cooperation, are not suitable for pneumothorax treatment. There are certain racial types met with within this country who exhibit little or no inherent or racial resistance to the ravages of pulmonary tuberculosis. Experience has shown that Negroes, Indians, Mexicans, and Esquimaux do not as a rule do well under pneumothorax therapy.

The advisability of the home treatment of pulmonary tuberculosis by artificial pneumothorax has been the subject of much discussion. A few authorities have gone so far as to hold that artificial pneumothorax is a procedure which should be carried out only in a well equipped sanatorium or



clinic specializing entirely in the treatment of tuberculosis. Although there is no denying the advantages of treatment under such circumstances, such an attitude appears to me to be unnecessarily restrictive and exclusive. The chief consideration for the successful issue lies with the patient. The technique of the method is the same whether applied at home or in an elaborately equipped institution. Sanatorial treatment can be approximated, at least, at home if sufficient pains are taken to impress the patient with the importance of such a regime. Intelligent and serious minded patients will cooperate fully at home if handled properly, whereas the unintelligent and indifferent will not cooperate satisfactorily either at home or in the best of sanatoria.

Now, that it is becoming gradually appreciated that climate does not have a specific beneficial effect on pulmonary tuberculosis as was once thought, cases are being treated successfully all over the country. The patient who is unable or unwilling to go away to a sanatorium can be treated quite satisfactorily at home.

My own feeling in the matter is that it is best when possible for patients to begin their collapse therapy in a sanatorium or at a hospital devoted to the handling of tuberculosis patients. It is usually necessary for a patient in the early stages of pneumothorax treatment to be under bed-rest treatment as in any case of active tuberculosis. Later, when ambulant, they can often leave the sanatorium and continue their pneumothorax treatment at home. The greatest advantage of sanatorial treatment is the great impression it makes on the patient. His contact with other patients who are recovering, the emphasis laid on system, thoroughness and patience, all tend to develop an *esprit* in the tuberculosis patient which is greatly to be desired.

#### TECHNIQUE

Various types and kinds of apparatus for use in pneumothorax treatment have been designed and are in everyday use. The basic principles are the same in all types, the apparatus simply being required to deliver a known volume of sterile air into the intrapleural space under definite manometric pressure control. It has been clearly

demonstrated that simple air, composed as it is, of approximately 75 per cent nitrogen, filtered through sterile cotton, serves essentially as well as pure nitrogen as a medium for injection. The Robinson apparatus has been used by the writer with entire satisfaction. It is simple, rugged, readily portable and can be used without an assistant. The Floyd type of pneumothorax needle has proven most satisfactory in my personal experience.

No preliminary hypodermic of morphine is necessary unless the patient is unusually nervous or apprehensive.

The position of the patient is important. He may either lie on the good side or sit leaning over a table as may seem best. The arms should be raised and arranged comfortably so as to widen the intercostal spaces. The patient should be stripped to the waist and the field protected by sterile drapes.

The usual site of puncture is from the 4th to the 8th intercostal space between the anterior and posterior axillary lines, but one should attempt to select a site where the pleura seems least likely to be involved in adhesions. Experience has taught that in many cases the only sure way of telling whether or not a pleural cavity is so far obliterated by adhesions as to prevent collapse by an artificial pneumothorax is to try to find a free pleural space by repeated careful needling of the chest.

Iodine and alcohol are used to sterilize the skin and scrupulous asepsis must be observed throughout. The operator should sterilize his hands as for any operation and should wear sterile rubber gloves. The air or gas to be injected is rendered sterile by being filtered through a compact filter of sterile cotton interposed in the transmission tubing from the apparatus to the needle.

One per cent novocain is employed for local anesthesia. A wheal is raised over the site selected for puncture and the chest wall infiltrated down to and including the parietal pleura.

A large blunt needle is used at the first treatment and it is well to incise the skin and subcutaneous tissues with a bistoury in order to facilitate its passage. Later on, a smaller needle is used for refills and such incision is not required.

The pneumothorax needle is connected with the apparatus by means of a length of sterile rubber tubing. All connections are closed and the needle is inserted into the pleural cavity. A distinct sense of resistance is encountered as the needle impinges on the pleura, which is lost as the point penetrates that membrane. The operator soon learns the "feel" of the needle as it enters the pleura. As soon as the needle is thought to be in the intrapleural space, the connection with the manometer is opened and the pressure observed. If the needle is in the intrapleural space, a negative pressure will be observed, increasing on inspiration and decreasing on expiration. No gas should be administered unless the manometer shows this fluctuating negative pressure. This opening or initial intrapleural pressure should always be noted and recorded as a part of the permanent case record.

At the initial treatment it is usually not wise to introduce more than 300 cc. of air. Subsequent refills at increasing intervals should also be small. Until the absorption of gas from the pleural cavity becomes very slow it is best to give the refills frequently and in small amounts. Ultimately it is usually only necessary to give the refills about every two weeks. The lung should never be collapsed too rapidly, but the refills should be made frequently and in small quantities in order to avoid a too sudden deoxygenation of the arterial blood and also the shock accompanying a sudden displacement of the mediastinum.

Rapid collapse of the diseased lung is advisable only in cases with active hemorrhage. In such cases, it is necessary to attain complete collapse of the lung at the first treatment if possible and as much as 1000-1500 cc. of air should be injected in order to secure firm compression.

High positive pressures are neither necessary nor desirable to secure good collapse and maintain satisfactory compression. In the average case, in the absence of acute hemorrhage, the lowest pressure which will accomplish these aims is the best pressure to utilize and maintain. After sufficient air has been introduced the amount of air injected is recorded, the pressure read and recorded, the needle is withdrawn from the chest, an adhesive dressing

is placed on the puncture wound, and the operation is completed.

#### DURATION OF TREATMENT

About 300 cc. of air is the usual amount administered at the first pneumothorax treatment. In the average case in which collapse of the lung is indicated, a second injection of about 250 cc. is given at the end of three or four days. Subsequent refills are then given at gradually increased intervals until the desired collapse or compression is obtained. The pleural cavity absorbs gas or air much more rapidly at first than it does after artificial pneumothorax has been long established. It has been estimated that in early cases air is absorbed at the rate of approximately 50 cc. a day. Later on, this absorption rate gradually falls until only about 25 cc. a day are absorbed, thus enabling the interval between refills to be lengthened to an average period of about two weeks.

X-ray study and examination are most important and desirable throughout treatment by artificial pneumothorax. The chief obstacle here encountered is the expense to the patient. Where the financial problem is a matter of grave consideration, which is usually the case in tuberculosis, a minimal amount of x-ray examination must be done. This should at least consist of a set of stereoscopic chest films taken before treatment is begun, another set taken after collapse has been or should have been attained, and subsequent films taken every six months unless circumstances particularly warrant additional examinations. The x-ray is especially valuable in following the effect of treatment on the contralateral lung and in determining the degree of collapse attained.

The fluoroscope is a great aid throughout treatment. By means of it, the presence of effusion can be detected early, the degree of collapse or compression accurately estimated, and the effects on the mediastinal structures noted.

Pneumothorax treatment, once begun, must be pursued without interruption until the patient is cured. If the diseased lung is allowed to re-expand following collapse, adhesions rapidly form between the lung and the chest wall in the majority of cases. If it then develops that the re-expansion has been allowed to take place prematurely, the mistake is as a rule irretrievable as the



adhesions generally prevent re-collapse by artificial pneumothorax. The only resource left in such cases is the formidable paravertebral thoracoplastic operation. It can thus be easily appreciated that one of the most difficult decisions occurring throughout treatment by artificial pneumothorax is to estimate when the lung may be safely allowed to expand. Although there can be no fixed plan for treatment in these cases, most authorities agree that two years constitutes a minimal period for maintaining compression of the tuberculous lung. This means that two years should elapse from the time when optimal compression has been established until re-expansion is allowed to begin. When it has been decided that re-expansion is indicated, it should be a very gradual procedure, brought about by a slow, periodic decrease in the intrathoracic pressure and a lengthening from time to time of the interval between refills. Many feel that exeresis of the phrenic nerve on the diseased side should be practiced following the discontinuance of pneumothorax treatment. Phrenicectomy maintains a constant partial compression, due to the diaphragm rising in the chest cavity, and prevents complete re-expansion of the diseased lung.

#### COMPLICATIONS

The operation of pneumothorax, from a technical standpoint, is a comparatively simple surgical procedure, and in the hands of an experienced, careful operator is attended with very little risk.

There are certain complications which occur at times, but these can for the most part be avoided by exacting care and scrupulous attention to proper technique.

The more common complications occurring in the course of pneumothorax therapy are as follows:

1. Pleural effusion.
2. Perforation of the lung.
3. Subcutaneous and mediastinal emphysema.
4. Pleural shock.
5. Gas embolism.
6. Intercostal hemorrhage.
7. Abscess in the chest wall.

Pleural effusion is the most common complication of artificial pneumothorax treatment. It has been generally estimated that

about 50 per cent of all cases under treatment develop some degree of serous effusion at one time or another during the course of treatment. Often the amount of fluid is small and may not be recognized except as the result of the most careful observation and examination. The cause of the high incidence of effusion in these cases is not clearly determined. Most probably the gas or air in the thoracic cavity acts as an irritant to the pleural surfaces and as such is conducive to the development of fluid. Pleural exudates are very much more apt to occur when adhesions are forcibly pulled upon, where rapid compression of the lung is attempted, and where high positive pressures are maintained.

Unless a patient develops a very large amount of fluid, and is disturbed thereby, it is best let alone. Treatment need not be suspended following the development of effusion. If sufficient fluid accumulates, it may be advisable to withdraw 200 to 300 cc. before injecting the air or gas at the refills. This replacement of fluid by air is a very helpful procedure and often results in the ultimate disappearance of fluid.

In about 5 per cent of the cases which develop effusion, the fluid becomes purulent. This constitutes a grave complication, especially if the pus becomes secondarily infected by the ordinary pyogenic organisms. Treatment in these cases depends chiefly on repeated aspiration together with mildly antiseptic irrigations. The majority of purulent effusions can be successfully treated in this way. The most important consideration is to avoid open drainage of the tuberculous empyema, unless it is certain that secondary infection has already occurred and is uncontrollable by other means. Acute, fulminating empyemata, of course, require open drainage. Such cases usually follow cavity rupture or bronchial fistula occurring during pneumothorax treatment, and are, as a rule, rapidly fatal.

Perforation of the lung probably occurs much more often than is realized. If the needle is small, little damage is done as a rule. If the lung is badly traumatized, spontaneous pneumothorax with or without a permanent bronchial fistula may result. This complication may be avoided for the most part by the use of a large, short-beveled needle at the initial puncture and by

taking care to avoid needling the chest where the lung is apt to be involved in pleural adhesions.

Subcutaneous emphysema occurs when air or gas leaks out of the thoracic cavity through the puncture wound in the parietal pleura. The air follows the fascial planes in the subcutaneous tissues and may spread extensively causing a most alarming appearance. Rarely, at times, following needling of the lung, air extends under the visceral pulmonary pleura into the mediastinal space and appears at the base of the neck. Subcutaneous emphysema can be prevented by avoiding any extensive injury to the pleura during the operation. A small needle should be used at refills, and should merely puncture and not otherwise injure the pleura. The needle should be held firmly in place during administration of the gas and should be withdrawn so as not to injure the parietal pleura. Air or gas should not be injected into the thoracic cavity under high positive pressure. If the pressure in the pleural space is high, coughing or sneezing may later force air out into the subcutaneous tissues.

When subcutaneous emphysema occurs, the patient should be reassured as to his condition, and a tight binder placed around his chest. Morphine may be administered if coughing is marked or if otherwise indicated. Usually the air is absorbed in a few days without any serious consequence.

Pleural shock, or the so-called pleural eclampsia, is a phenomenon which very occasionally occurs. Its mechanism or nature is not clearly understood. It is presumably a kind of nervous collapse induced by painful stimulation of the pleura. Many authorities believe that most cases of so-called pleural shock are really instances of gas or air embolism with cerebral manifestations. It is always well to anesthetize the chest wall and parietal pleura before introducing the pneumothorax needle. This tends to prevent such shock, or movement on the part of the patient, due to sudden pain, and is most appreciated by patients whose whole-hearted co-operation is to be greatly desired during the long course of treatment in these cases.

Gas embolism is a serious complication which may occur when air or gas is inadvertently injected into a pulmonary vein. The

air is carried to the heart and thence to the systemic circulation. Air bubbles in the cerebral circulation may cause apoplexy or other manifestations. This most undesirable of complications can almost certainly be prevented by the inflexible rule of injecting no gas or air unless the manometric pressure readings indicate that the needle point is within the intrapleural space.

Hemorrhage due to injury to an intercostal vessel by the pneumothorax needle should rarely be observed. As in all needling operations on the chest, the needle should be introduced in an intercostal space closer to the upper border of the lower rib than to the lower border of the upper rib. This precaution tends to minimize the risk of injuring the intercostal vessels.

Scrupulous aseptic technique should be observed at all times when introducing a needle into the thoracic cavity. When infections or abscesses of the chest wall occur in spite of such care, they are usually "cold" or tuberculous abscesses and generally are due to infection from within following the needle as it is withdrawn. This is particularly apt to occur following the aspiration of tuberculous pleural effusions. In such cases, the needle should be flushed out with sterile fluid and one or two drops of some antiseptic, such as tincture of iodine, injected through it as it is withdrawn from the chest wall. When a cold abscess forms, it should be evacuated by aspiration through healthy tissue. Open drainage is to be avoided as inevitably leading to secondary infection.

## RESULTS

The results of artificial pneumothorax treatment in selected cases of pulmonary tuberculosis have been so successful as to leave no doubt as to its value, in the minds of those familiar with the method.

Broadly speaking, a case in which pneumothorax therapy is indicated has about six times as great a chance of getting well under this type of treatment as without it. In addition to the ultimate outcome being much brighter, the time consumed in getting well is much reduced in the average case under pneumothorax therapy, and the disabilities under which the patient labors are greatly lessened.



Rist has made a most convincing survey of the results in artificial pneumothorax by an extremely careful analysis of 1222 cases in his services over a period of 14 years. He took as controls those patients in whom pneumothorax treatment was indicated but in whom it was prevented by a blocked pleural space. He also had as controls another group who were suitable for this type of treatment but who refused to submit to it when it was advised. Combined, these two groups formed about 40 per cent of the entire series. As "well" are classed patients anatomically healed or able to work. Of the group treated by pneumothorax, 52 per cent became "well", and 35 per cent were reported as improved, while the remainder were uninfluenced, worse or dead. In those in whom the pleural space was blocked by adhesions, only 8 per cent were well; while not one of the 200 or more patients who refused the treatment was anatomically well or able to work.

Although artificial pneumothorax has been justly acclaimed as probably the greatest single advance in the treatment of pulmonary tuberculosis that has taken place in the past 30 or 40 years, it is far from being a simple answer to that tremendous problem. Artificial pneumothorax is of the greatest value in the treatment of carefully selected cases and its results are often surprisingly brilliant and spectacular. However, it is but one of the many resources which should be intelligently employed in the treatment of this disease. Rest, a highly nutritious diet, general tonic measures, good environmental conditions, and careful graduated resumption of activities, remain, as they have always been, fundamentally important in the treatment of pulmonary tuberculosis. Just as the use of insulin should merely supplement and reinforce the basic dietary regulation and care of diabetes mellitus; just as the organic arsenicals are but a part of the treatment of syphilis; so artificial pneumothorax remains a valuable and important factor in the treatment of certain stages of pulmonary phthisis. It should not be regarded as a cure-all or a short cut in the treatment of tuberculosis of the lungs. It offers much, even in some cases where hope seems gone, when intelligently and wisely employed and skillfully performed. Occasional spectacular results should not, however, create blind, unreason-

ing enthusiasm, nor should regrettable failure at times argue the discontinuance of its use. Properly employed, it is a method which no physician who treats tuberculosis can afford to neglect or disregard.

#### SUMMARY

The use of artificial pneumothorax in the treatment of pulmonary tuberculosis has advanced from a theoretical proposition first suggested in 1822 to a well recognized surgical procedure of the greatest practical importance.

The action of artificial pneumothorax depends upon certain anatomical and physiological conditions which prevail in the thorax. Chief of these are the normal negative intrapleural pressure and the inherent elasticity of the lung.

The indications and contraindications for pneumothorax therapy must be well understood and appreciated in order to employ this method safely and effectively.

The technique of artificial pneumothorax is relatively simple. The apparatus, instruments and technique have been developed with the fundamental purpose of enabling the operator to inject a known volume of sterile air or gas into the pleural cavity, under definite pressure control.

Most of the complications occurring during pneumothorax treatment may be avoided by care and attention.

The duration and details of treatment vary in the individual case. Treatment must be adjusted to the case and not the case to the treatment. As a general rule, compression of the diseased lung by artificial pneumothorax should be maintained for a minimum of two years.

The result of pneumothorax treatment are such as to establish beyond question, or doubt, its place as a most valuable resource in the treatment of certain types of pulmonary tuberculosis.

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## TUBERCULOSIS OF THE KIDNEY\*

### REPORT OF CASES

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During the last few years we have been very much interested in tuberculous infection of the genito-urinary tract. In fact, we have found it so frequently in our work that a laboratory examination for tubercle bacilli is a routine for all patients who present themselves with symptoms of persistent cystitis and pyuria. We have detected it in cases having generalized tuberculosis and in a number of cases in which we have not been able to find any other focus of tuberculous infection. Two of these cases have been worked up and followed a sufficient length of time to lead us to believe that the diagnostic procedure used and the results obtained might make a report of interest. Both patients were in my own practice and the surgical procedures were done by my colleague, Dr. James L. Jordan.

First: Mrs. O. D. G.; white; female; 26. Father living and in good health; mother died of pneumonia; no history of tuberculosis in the entire family. She had been married for 9 years and came to us in September 1929 in an extreme degree of nervous debility and emaciation. Her chief symptoms were those of cystitis and extreme nervousness. Her heart was normal; her lungs were negative; her abdomen was negative except for tenderness over the bladder region; temperature 99 4/5; blood pressure 110/90; weight 92 pounds. X-rays of chest, stomach and gastro-intestinal tract were completely negative except for an extreme degree of gastrop-tosis. Her urine had a sp. gr. of 1002, and contained a trace of albumin and numerous pus cells. After centrifuging this catheterized specimen of urine for one hour and staining the precipitate, we found numerous tubercle bacilli. Cystoscopic examination, which was done by Dr. W. G. McCown, showed an extreme degree of bladder inflammation such as is typically found in tuberculosis of the bladder and, after several trials, he was able to catheterize the ureters and to prove conclusively that the

pus and the tubercle bacilli were coming from the right kidney. We tried all the urinary antiseptics and bladder sedatives that we knew of and still this patient's life was miserable and she made ours nearly as bad. Consequently in November 1929 we removed the right kidney and found it to be tuberculosis. This patient had a stormy convalescence but gradually began to get well and we last saw her in May 1930. In June 1931 her mother-in-law reports that she gave birth to healthy twins.

Case No. 2. L. M.; white; female; 21. This patient came to us in the spring of 1930 with symptoms of cystitis. She had had an unfortunate marriage and divorce and we naturally fell into the error of believing that she had a gonorrheal infection. No member of her family had ever had tuberculosis and this particular girl was the picture of health with an average weight of about 140 pounds. It was never suspected that she might have a tuberculous involvement until after we had run the gauntlet of treating her for bladder and kidney troubles without any success. After centrifuging a catheterized specimen for one hour and using the usual stain we found the slide loaded with tubercle bacilli. They seemed to be in colonies between the pus cells. Dr. McCown then attempted to catheterize the ureters for us but her bladder was so badly involved that after several attempts he gave up. However, her decline was so rapid we sent her to the Vanderbilt Hospital in the hope that someone there might be able to catheterize the ureters. She stayed there three weeks and they tried the procedure almost daily without success. They inoculated guinea pigs with the urine and they later died with tuberculosis. At the end of three weeks this girl came back to us almost moribund. At that time we had gotten our first doses of Uroselectan which we used in her case. Since she was a very sick girl we used this new iodine drug with some bit of fear but with such happy results that we have continued to use it since. Having convinced ourselves that this girl had no pulmonary tuberculosis, we felt that our only chance to relieve the high fever she was then having was to do a drainage first and to remove the diseased kidney later. This girl had lost 40 pounds; was vomiting; temperature 101 to 103; and in an extreme degree of misery. Under local anesthesia Dr. Jordan was able to put a tube into the pelvis of the kidney from the back and was fortunate enough to drain a large abscess. After this she began to improve rapidly and urine came through the sinus in the back. She left the hospital two weeks later and continued to improve. Two months later she had gained 15 pounds, and was running little or no fever. At this time under general anesthesia we removed the kidney. It was honeycombed with tuberculous abscesses. She had an uneventful operative recovery. This girl was seen a few days ago, weighed 140 pounds and is doing the cooking and housework for her mother and sisters. She is as pretty as a picture and enjoying life. However, a cystoscopic examination done at this time shows that the bladder has not entirely healed and we were not able to find the ureteral openings. Yet her symptomatic improvement has been so great that we cannot help but feel this girl will continue to improve.

These two cases are reported as offering a ray of hope to those suffering from tuberculosis of the genito-urinary tract, and as a testimony to intravenous urography in cases in which catheterization of the ureters cannot be accomplished.

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## THE FUTILITY OF GLUCOSE ENEMATA BEFORE AND AFTER OPERATIONS

The application of the nutritional principle that "fats burn in the fire of carbohydrates" to the prevention and treatment of acidosis before and after operations has reduced enormously the hazard of major surgery. The free use of orange juice, lemonade and other fluids containing soluble carbohydrates, by mouth, and the subcutaneous and intravenous use of dextrose and glucose solutions, with the use of insulin when indicated, will prevent and relieve surgical acidosis; but the rectal employment of glucose and dextrose solutions whether given by the Murphy drip, or the other so-called nutrient enemata, in the light of recent observations seem not only valueless but actually harmful to the surgical patient. Likewise, the principle of "pushing fluids" and the use of saline solutions to prevent dehydration, while of great value when properly applied, may be overdone. The surgeons are indebted to their medical confreres for aid in the solution of their problem of acidosis and dehydration.

Recent studies seem to prove that very little, if any, dextrose or glucose is absorbed from solutions given by the rectum. McNealy and Williams<sup>1</sup> in their experimental studies on the absorption of glucose from the colon concluded that in dogs there is little or no absorption of glucose or dextrose through the colonic mucosa. Pressman<sup>2</sup> apparently proved that following the introduction of dextrose into the rectum there is a reduction in the blood sugar content, so that

there must either be no absorption of dextrose from the colon, or the little that may be absorbed is stored in the liver. deTakats<sup>3</sup> showed that in a normal individual whose blood sugar was studied after an average meal, after the introduction of 1000 cc. of a five per cent solution of dextrose given subcutaneously, and after 1000 cc. of a five per cent dextrose solution given per rectum by the Murphy drip, the sugar content of the blood rose after the normal meal, and after the administration of the five per cent dextrose solution given by hypodermoclysis, while after the rectal drip of five per cent dextrose solution the blood sugar level fell. Not only was there no utilization of the dextrose given per rectum to a normal individual, there was gaseous distension and discomfort following its use, which deTakats thought was due, perhaps, to changing the flora in the colon and to the distension from the unabsorbed fluid. No doubt much of the flatulency and other abdominal discomfort following operations of all kinds is due to the routine use of dextrose solutions given per rectum. Schmidt<sup>4</sup> in studying blood sugars of non-diabetics a few hours before death found low sugar concentration in the blood of three postoperative cases who had been receiving a five per cent glucose solution by the Murphy drip method. It therefore seems that both from experimental and clinical studies, the use of glucose or dextrose solutions via the rectal route not only is futile, but may be actually harmful to patients either before or after operation. Many surgeons now wisely spare the rectum except for the use of plain warm water given either as cleansing or retention enemata.

Trout<sup>5</sup> years ago protested against the then indiscriminate postoperative use of salt solutions per rectum, because he considered an excess of salt in the blood and tissues of the body may be actually harmful to the surgical patient. Instead of the salt solutions he advised the liberal use of tap water per rectum. Moynihan<sup>6</sup> uses carbonate of soda with glucose solution to prevent acidosis before and after abdominal operations, but he advises against the use of salt solution. Unquestionably the normal salt solution may be partly, or wholly, absorbed through the colonic mucosa, and if too much is given, particularly to the patient with damaged kidneys, the sodium-calcium-po-

tassium balance of the blood is disturbed, and the excess of salt in the tissues may cause edema of the lungs and other parts of the body, from water retention.

It may be best to discontinue the use of the so-called normal salt solution altogether before and after operations, except where carefully checked laboratory studies of the blood shows a low salt content as in alkalosis and in intestinal obstruction. It would seem rational to use instead not more than 1000 cc. a day of Ringer's solution which combines sodium, calcium and potassium in the same ratio as in the normal blood. The Ringer's solution may be given rectally or with glucose solutions either subcutaneously or intravenously.

In a very timely article on the dangers of the surgeon's order to "push fluids", deTakats<sup>3</sup> calls attention to "the fear of dehydration that has swept the country". deTakats thinks that 3000 to 4000 cc. in twenty-four hours is as much fluid as a patient should have before or after any operation; and that where there is myocardial damage, or kidney insufficiency, or both, the fluid intake should be reduced very materially. The dehydrated, oftentime undernourished, patient frequently has some cardiorenal damage; and a weak heart may fail, and poorly functioning kidneys may allow water retention with the symptoms of what Rountree<sup>7</sup> calls "water intoxication", if an excessive amount of fluids is given.

There is always the question of how much of even plain water is absorbed from the colon. If it is retained in the colon and not absorbed it adds to the abdominal distention and the water balance of the body is low; whereas, if too much is absorbed there is danger of overburdening a weak heart or that damaged kidneys may cease to function with the added burden of eliminating an excess of fluid. The indiscriminate use of the Murphy drip with even plain warm tap water may be the deciding factor against the recovery of a patient of low vitality who has trusted his life to the surgeon of his choice.

Certainly the safest and the most accurate methods of administering dextrose solutions, Ringer's solution, and saline solutions before or after operations are subcutaneously and intravenously. The rectum should not be disturbed in a futile attempt

to nourish any patient whether surgical or medical, by the use of glucose, or other so-called nutrient enemata, but should be reserved for the use of plain water, which may be absorbed and thus aid in establishing the water balance in cases in which dehydration may be a factor.

If the preoperative or postoperative patient cannot take fluids by mouth and the surgeon feels that he must give fluids per rectum, he must be sure that he will not do anything that may reduce the patient's chance for recovery; and undoubtedly the safest, surest and most comfortable method of administering fluids via the rectal route is by the use of 200 to 300 cc. of plain warm water enemata given slowly through a soft rubber catheter every two or three hours. Some prefer the less certain Murphy drip method of giving water per rectum. Whatever may be the method of administering fluids, whether orally, rectally, subcutaneously or intravenously, except in rare cases, not more than 3000 to 4000 cc. should be given within twenty-four hours. The surgeon or his medical confrere, should see to it, however, that every postoperative case, except the underweight asthenic, with low vitality, should have approximately 3000 cc. of fluids a day. The preoperative and postoperative application of the well known physiological principles of carbohydrate and fat metabolism and water balance in the tissues not only saves lives, but adds peaceful nights and comfortable days to the life of the wise surgeon.

S. H.

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# THE ROLE OF PLASMOCHIN AS A PUBLIC HEALTH MEASURE

Plasmochin is a synthetically produced compound containing a quinoline ring: *n*-diethylamino - isopentyl - 8 - amino - 6 - methoxyquinoline. The first clinical experiments with this drug were conducted in 1925 by Prof. F. Sioli on patients who had been inoculated with tertian malaria for the treatment of general paralysis.

In 1928 and 1929, Barber, Komp and Newman, of the United States Public Health Service, studied the effect of small doses of plasmochin on the viability of gametes as measured by mosquito infection experiments and reached the conclusion that a dosage far below that usually recommended is effective against gametes and that such small dosage might likely be utilized with safety in any population for mass treatment of severe cases, especially where transmission is active.

In 1926, the late Dr. Deeks, Medical Director of the United Fruit Company, and his staff, working in countries with an enormously high malarial incidence, became much interested in the possibilities of this drug, both in the treatment of the more chronic types of malaria with which their work had perennially to deal, and also in its use as an indirect method of control in the spread of this disease. For the interested student of malaria, the annual reports by this company of the experiments and work by its staff during the past five years constitute quite informative and worth-while reading.

This much has been definitely established by scientific research. It is only through the sexual form of the malarial parasite, the gametocyte, sucked into the alimentary tract of the female anopheline mosquito, that malaria can be transmitted and the species perpetuated. Further, while quinine and its salts are known to be specific in the destruction of the asexual forms of the parasite they do not devitalize, nor sterilize the gametocytes to such a degree as to render the individual non-infectious to mosquitoes; consequently, in chronic or inadequately treated cases, each such case may become a potential reservoir of rich gametocyte infection. It is this complementary action of plasmochin to quinine which gives promise of a claim which may prove of last-

ing worth. Much of the scientific and clinical evidence seems convincing that in this drug we do possess a valuable weapon in breaking the link of transmission from the infected individual to the vector by rendering the former non-infectious through therapeutic means. It may well be that plasmochin is not the last nor the best which science may have to offer; but it certainly affords an interesting lead and should spur on health workers and clinicians to eagerly seize upon all sparks falling from the anvil of science which give promise of hope. A more extended clinical testing of the drug in large groups and in highly infected communities by the blanket method of treatment has proven the efficacy of plasmochin in devitalizing the gametocyte and in such small dosage as to be innocuous to the patient. This being true, an additional valuable weapon, which severs one link in the chain of transmission, has been made available in the warfare against this scourge to the human race. The medical staff of the United Fruit Company, in its 1930 annual report, recommends that an infected adult individual receive one tablet of plasmochin compound (1/6 gr. plasmochin hydrochloride with two grains of quinine sulphate) and ten grains of quinine sulphate twice daily for a period of six days; after an interval of two weeks the blood is reexamined and if found positive, the course is repeated. In a large blanket survey made by these workers it was found that the initial six day treatment took care of approximately 80 per cent of the infected cases.

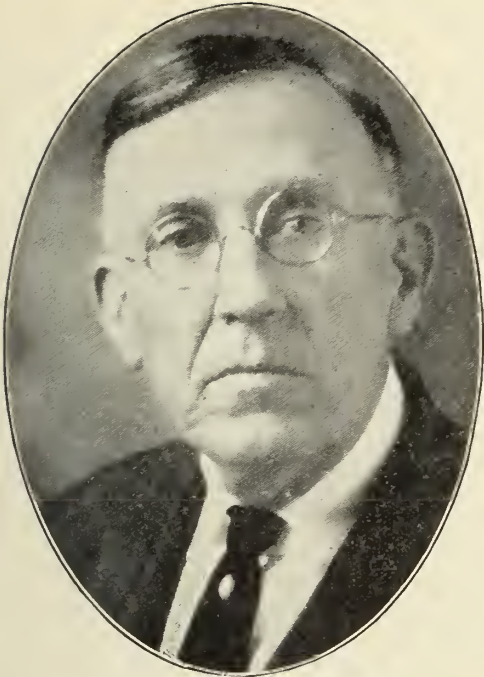
Quinine will likely ever remain our sheet anchor in the treatment of malaria; but if quinine's hand can be further strengthened by the addition of a co-partner whose action supplements and expands its scope of usefulness, should not recognition be given it?

J. N. B.

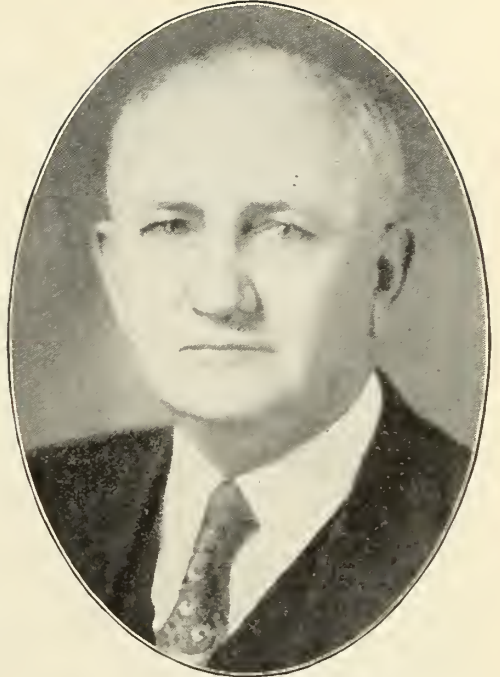
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## A NOTE TO SECRETARIES

The Secretary of the Association will be indebted to the Secretaries of County Medical Societies if they will furnish him promptly lists of newly-elected officers chosen to serve during 1932. An ordinance of the Association specifies that this be done within ten days after elections are held. (Page 67 of the Red Book.)



A. L. HARLAN, Alexander City  
1926-1927



E. V. CALDWELL, Huntsville  
1928-1929



L. E. BROUGHTON, Andalusia  
1929-1930

PAST PRESIDENTS OF THE ASSOCIATION



## DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF ADMINISTRATION

J. N. Baker, M. D.  
State Health Officer in Charge

#### IMMUNIZATION ACTIVITIES BY HEALTH UNITS

Much of the sporadic criticism, now and then arising within the profession, regarding the activities of our health units in an effort to prevent disease and reduce suffering is readily traceable to a lack of full understanding, on the part of those making comment, of the objectives sought through such procedures. Every community, before it is willing to accept any new agency, must be taught and actually shown that it is both necessary and safe. The logical forces through which to disseminate to the people these newer things would seem to be the recognized official agency of a county—the health unit—solidly backed by the enlightened leadership of the medical profession. This leadership should never be lacking where the profession is thinking and laboring to prevent as well as to cure disease, and where there exists a sympathetic and co-operative spirit between profession and health workers.

Your State Health Officer, because of his many service stripes gained through thirty years of service in the active field of practice, is quite aware of the complications likely to arise in that twilight zone created by preventive medicine on the one side and curative or individualistic medicine on the other. In order to reach a fair and equitable solution for all concerned, there must exist a full, complete and sympathetic understanding between these two responsible forces—the profession and the health workers.

With the hope of furthering this spirit and of more closely cementing these groups, the following letter has been sent to all County Health Officers.

November 12, 1931.

Dear Doctor:

My attention is again directed to complaints arising from some members of the medical profession in certain quarters of the State as to the practice of

health units in regard to immunization against communicable diseases. This question was rather fully and succinctly dealt with by our State Board of Censors at the April meeting of the Association in Birmingham, and will be found on pages 27-28 of the July issue of our Journal.

In Alabama, the organized profession of a county, speaking through its County Board of Censors and its County Health Officer, must, in large measure, furnish the leadership and determine the policies as to how the newer agencies now known to medical science are to be meted out to the people who, we must concede, are entitled to this protection. The health officer in any community should be viewed both by the profession and the laity as the expert in communicable diseases and should exhaust every means to see that this service is furnished in a manner approved by and acceptable to his local medical profession. The profession should understand that group activities on your part—as for example school children—are largely for educational purposes with the hope that, once the lesson is taught, the people will then turn to the family physician for this necessary service. In arranging for group immunization work, the fact should be stressed that your efforts are directed primarily at the less well-to-do and that those whose finances justify should seek this service at the hands of the physician.

On the other hand, your profession should be made to realize that the public is demanding such service and that the profession should be willing, ready and prepared to contribute their full part to a satisfactory solution of this problem.

With these thoughts in mind, I should like to have you, either through personal contact or through action of your County Medical Society, procure an expression of sentiment from your doctors as to your practices in this regard. I shall appreciate this information at your earliest convenience for my future guidance.

Very truly yours,  
J. N. Baker, M. D.,  
State Health Officer.

BUREAUS OF INSPECTION AND  
LABORATORIES

C. A. Abele and L. C. Havens, Directors,  
Respectively

## FOOD POISONING

Recent work has done much to clarify our knowledge of this dramatic disease. Ever since the German meat inspector, who, in 1896, was called on to pass upon the quality of some suspected sausages, and, in order to prove their suitability for consumption, ate several, thereupon promptly dying of acute gastro-enteritis, it has been known that gross changes in the food do not necessarily accompany the infection. This often adds to the difficulty of determining the offending food.

Food poisoning is known to be caused by a variety of bacteria, and probably is caused by more different varieties than are suspected. It has been known since 1888 that *B. enteritidis* is the cause of certain outbreaks. This organism usually occurs in meat and is not often found in healthy, sound carcasses. In 1898, *B. aertrycke* was discovered, its name being due to the Belgian village where the outbreak occurred. This is, perhaps, the commonest cause of food poisoning. The organism is widely distributed in nature, thus offering increased chances for infection of food. Human carriers are known to exist and animals, such as rats and mice, harbor it. A unique outbreak in New York, due to *B. aertrycke*, was traced to cream puffs which had been contaminated in the bake-shop by rats.

Another type of poisoning due to food is botulism. This is strictly an intoxication; the causative organism, *Cl. botulinum*, grows in the food and secretes a powerful toxin. The organism will not grow in the animal body. Its toxin is one of the most potent known, half an olive being known to contain sufficient to cause death.

The surmise that unsuspected bacteria may sometimes be the cause is strengthened by Jordan's recent discovery of a staphylococcus in some chicken salad responsible for an outbreak in New York state. This staphylococcus produces a toxin in broth cultures which causes typical symptoms of gastro-enteritis when fed to monkeys and human volunteers. Two other outbreaks

due to food contaminated with staphylococci have been described, one caused by a cream-filled cake, and the other due to warmed-up chicken.

The characteristics of food poisoning are its short incubation period, the symptoms appearing abruptly, usually within a few hours after eating the offending food; the dramatic suddenness of the onset, violent vomiting and profuse diarrhea developing often without any premonitory symptoms; and its short duration, usually only a few days and often less than twenty-four hours.

The State Health Department has recently investigated an outbreak in Montgomery involving 20 or more persons who were made sick after eating sandwiches sold at various drug stores. Symptoms developed in from 1 to 6 hours after eating the incriminated sandwiches. The onset was sudden, with nausea, vomiting and diarrhea. In several cases the attack was so severe as to cause prostration, necessitating hospitalization. The duration, in the majority of the cases, was 6 to 8 hours; in none did the attack last longer than twenty-four hours.

It was found that these sandwiches came from one source. Investigation showed that it was a baked ham, which was the causative factor, since all the persons who were made sick ate sandwiches prepared from the ham, and sandwiches prepared at the same time, with other ingredients, did not cause any illness. Although the ham had been cooked twice, cultures made from portions of it showed a staphylococcus similar to that found by Jordan, making this the fourth outbreak on record, due to this particular organism.

This outbreak illustrates a feature common to many, that ordinary cooking often fails to completely sterilize the food. It has been repeatedly shown that cooked food contains the causative organism. Penetration of heat to the interior of a large piece of meat or a dish of macaroni, for example, is slow, and the interior may not reach a temperature sufficient to kill all bacteria. The majority, if not all, of these food-poisoning outbreaks may be prevented by scrupulous care in the preservation and storage of food, thorough cooking of all food, and the avoidance of left-over food if there has been time for development of bacteria and their poisons after its initial preparation.



## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### TUBERCULOSIS IN THE SCHOOLS

The question is very frequently raised as to whether an adult or child with tuberculosis should be allowed in the public schools. Naturally parents do not want their children exposed to the danger of contracting tuberculosis but an arbitrary decision that all persons with tuberculosis should be excluded is hardly justified.

There are two factors to be considered in every instance—the person directly concerned and his or her contacts. Obviously a person with active tuberculosis should not be teaching or attending school. Rest is one of the prime requisites of treatment and rest is hardly synonymous with school life. Activity implies that the tubercle bacillus is growing and multiplying and hence may be transmitted to others. These persons, whether pupil, teacher, janitor or other employee, should be excluded from the schools.

There are other people, however, in whom a diagnosis of tuberculosis has been made but in whom there are no signs or symptoms of any activity. Such a diagnosis may be made by means of a positive tuberculin test combined with x-ray examination. These cases are considered latent and since they do not in any way endanger their associates, there is no reason for excluding them from school. In the past injustice has been done certain children through fear on the part of other school patrons. Sane judgment must be exercised in each individual case but if there is reasonable doubt as to the status it is better to err on the side of conservation and exclude for a time.

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## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

### RED WATER IN PUBLIC WATER SUPPLIES

“Red Water” is the term usually applied to water drawn from public supplies which has a reddish or muddy appearance noticeable in vessels used in domestic service. Red water must, however, be distinguished from waters colored by organic extracts or

apparently colored by the presence of clay or turbidities of such types.

Red water may be present in supplies secured from either underground or surface sources. The cause is the presence of oxidized iron or commonly iron rust.

The undesirable effects of red water beyond appearance, are the staining of porcelain fixtures, staining of clothing in laundering, clogging of carrying mains and destruction of such mains. Of these the reader is probably interested directly only in appearance of the water and the effect in laundering and on fixtures and utensils coming in contact with such waters.

Iron in water may be present in the source of supply and not be removed before the consumer gets it, or the iron may be taken up from the steel or iron storage structures and carrying pipes due to the activity, or corrosiveness of the water.

Water, as is generally known, is almost a universal solvent. Iron is one of the most abundant of metals. The ability of water to dissolve iron is enhanced by the presence of dissolved oxygen and carbonic acid gases. Both of these are taken up from the atmosphere and during the passage of the water through the soil. Carbonic acid is a product of combustion or decay of organic material and hence exists in the soil and the atmosphere. It may be expected then that ground waters would ordinarily be more heavily impregnated with both carbonic acid and iron content.

The removal of iron present in a source of supply is merely one of oxidation which changes the iron from a soluble to an insoluble form.

Oxidation may be secured mechanically, by aeration, or chemically by treatment, usually with lime. Mechanical oxidation—aeration—rarely is complete and if used is ordinarily followed by lime treatment. The chemical treatment is easier to control and costs are about equal.

The insoluble iron is then removed by sedimentation or by filtration or a combination of the two processes. Water, after such treatment, of course, is less capable of dissolving iron from stand-pipes, tanks, or iron pipes.

Waters that are high in free carbon dioxide and dissolved oxygen have the ability to dissolve iron. Such waters, not specially

treated to remove the tendency, will absorb iron from the distribution system and when released at the spigot will show red immediately or after exposure to the atmosphere.

The oxygen causes the corrosion of the pipes but unless carbon dioxide is present also such corrosion is usually stopped before noticeably disagreeable results are attained. It is not desirable or possible, practically, to rid water of dissolved oxygen so instead the carbon dioxide is removed.

The activity of the water is also influenced by temperature, velocity, and by the presence of other mineral salts. The hot water piping systems, therefore, give the greatest trouble.

Treatment, to render water less corrosive, is to rid it of free carbon dioxide and also to increase the amount of calcium carbonate sufficient to form a protective film on the water contact side of the containing vessel or appurtenance.

Water purified by the usual method, that is, by alum (aluminum sulphate) coagulation and filtration, has its carbon dioxide content increased due to the action of the alum on the alkalinity (lime) in the water. Therefore corrosive water results after treatment which may not have had such a characteristic before. To inhibit this corrosive tendency, lime or soda ash is added to combine with the free carbon dioxide before the water is sent to the distribution system.

As municipal water supplies usually serve industries and as the chemicals added to reduce corrosion are themselves objectionable in certain domestic and industrial uses, a balance or compromise is often necessary in water adjustment.

Red waters have no direct health significance. The presence of iron rust may, however, induce people to drink a water of better appearance but of inferior bacteriologic quality. This inclination should be strongly advised against.

## BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

### ACTIVITIES OF THE BUREAU

#### General Activities

All nursing activities undertaken by the State Board of Health come either directly or indirectly under the supervision of the

Bureau of Child Hygiene and Public Health Nursing. The regular public health nursing services rendered by this bureau may be listed as follows:

a. Receiving and passing upon applicants for county public health nursing positions.

b. Selecting candidates for preliminary training at the Field Training Station.

c. Giving assistance to county health officers in filling vacancies for county public health nursing positions.

d. Maintaining a field advisory service in public health nursing for county health departments. There are four nurses attached to this bureau who serve in this capacity. They visit the organized county health departments at more or less regular intervals for the purpose of advising health officers and public health nurses regarding the conduct of that part of the health program which is carried on by nurses.

e. Maintaining floaters for emergency relief nursing service to county health departments and to citizens in unorganized counties. If possible this service is supplied to county health departments putting on special projects or to counties in which the regular public health nurse is temporarily absent. Service is rendered to unorganized counties in epidemics. Usually from one to three nurses are carried on the staff for this purpose. As a rule, they are nurses who have had the preliminary introduction at the Field Training Station and are waiting for permanent assignment to a county health department staff.

The director of the Bureau of Child Hygiene and Public Health Nursing acts in an advisory capacity to the other bureau chiefs who wish to employ nurses for special activities. She assists in selecting the nurses and gives advice concerning the planning and carrying out of programs. After such nurses are employed they are directly responsible to the director of the bureau to which they are assigned.

#### Special Activities

*Traveling Chest Clinics:* The Bureau of Preventable Disease Control employs nurses for work in the traveling chest clinics. There are one or two clinicians and two nurses on the staff of each of the two clinics. This is an advisory diagnostic service rendered to the practicing physicians of the State at the invitation of the



local county medical societies. The aim of the service is to assist in the control of tuberculosis by early diagnosis of the disease. Chest clinics remain one week in each county. Clinics are operated in co-operation with the local county health departments, the preliminary and follow-up work being done by the local health officers and public health nurses. The clinic nurses assist in the conduct of the clinics, in keeping the necessary records, and in making reports.

*Demonstration in Venereal Disease Control:* The Bureau of Preventable Disease Control formerly employed one colored nurse for a demonstration in venereal disease control in a selected county. The demonstration lasted from April 1930 to September 1931. The purpose of the demonstration was to determine the prevalence of syphilis among the negro population of an average rural county of Alabama, and to determine the practicability of administering treatment in the field. The nurse assisted in making the survey and in giving the treatments at various field centers. She also did follow-up work in the homes. The work was carried on by a physician and a nurse, working under the direct supervision of the local county health officer and the director of the Bureau of Preventable Disease Control.

*Midwife Control:* The State Board of Health has formulated regulations for control of the practice of midwifery in Alabama. While its application may vary in each county, the program is essentially the same in all counties having full-time health departments. Midwives are required to register at the local county health office. A record, by years and months, showing the number of births attended, the number of stillbirths, infant deaths, and maternal deaths, is kept for each midwife. Individual instruction given by the health officer and public health nurse is based on the record of the midwife's work. In some counties group instruction is given. Permits, if issued, are renewed annually by the county board of health, contingent upon the satisfactory record of the midwife.

The field advisory nurses from the Bureau of Public Health Nursing try to promote effective midwife control programs, through the health officers and public health nurses in organized counties. The

Bureau of Vital Statistics employs a colored nurse as its field agent in securing prompt and accurate reporting of births and deaths. She works alone in unorganized counties and in cooperation with health departments in organized counties. The work is carried on chiefly with local registrars and with midwives. While the program is primarily aimed at better registration, it has been effectively used as a midwife control measure. The colored field nurse is supervised jointly by the directors of the Bureau of Vital Statistics and the Bureau of Child Hygiene and Public Health Nursing.

## BUREAU OF VITAL STATISTICS

W. T. Fales, Director

Ethel Hawley, Acting Director

### COMPARATIVE DEATH RATES FOR THE FIRST NINE MONTHS OF 1931, 1930, AND 1929

If the death rate for the next three months continues as low as for the past nine, 1931 will show the lowest mortality experienced by Alabama in a number of years.

The white rate for all causes of 8.8 per 1,000 is 4 per cent less than the 1930 rate and 13 per cent less than the 1929 rate for the same period of time. The reduction in the colored rate is even more marked. The 1931 rate of 13.8 per 1,000 is 8 per cent less than the 1930 rate and 16 per cent less than the 1929 rate for the same period of time. The typhoid fever rate bids fair to be the lowest in the history of the Bureau of Vital Statistics. The rate of 5.0 per 100,000 for white is 23 per cent less than in 1930 and 24 per cent less than in 1929. The colored rate of 8.0 per 100,000 is 12 per cent less than in 1930 and 25 per cent less than in 1929.

Pellagra with a white rate of 10.9 is 32 per cent less than in 1930 and 21 per cent less than in 1929. The colored rate of 28.9 is 24 per cent less than in 1930 and 61 per cent less than in 1929.

Diarrhea (and enteritis) has a lower rate than at any time in the past six years. The white rate of 28.4 is 32 per cent less than in 1930 and 25 per cent less than in 1929. The colored rate of 23.8 is 41 per cent less than 1930 and 37 per cent less than in 1929.

The decrease in the rate from these three causes is remarkable, particularly in regard

to pellagra and diarrhea, since it would be expected that in a time of drouth and economic depression, the rate from these diseases would rise. Since the reverse has been true, it would indicate that the efforts put forth for the control of these diseases has been effective.

So far this year the mortality record for cancer is quite favorable, although the colored rate shows a substantial increase. The white rate is 4 per cent less than in 1930.

The degenerative diseases have not shown the advances that would have been expected from the rates of former years. Heart disease, nephritis, and cerebral hemorrhage show a substantial decline over the 1930 rate.

One of the alarming features of the mortality figures for the first nine months is the increase in the number of suicides among white people. The rate rose 18 per cent in 1930 over 1929 and the 1931 rate has shown a further increase of 5 per cent.

The prospect is that Alabama will more than maintain her unenviable record in the matter of homicides, as the white rate has already shown an increase of 58 per cent over the same period of time in 1930. Fortunately the colored rate is slightly less than for last year. Since negro homicides always account for from two-thirds to three-fourths of the total in this State, the final showing will not be quite as bad as the increase in the white rate would indicate.

Indications are that the rate from automobile fatalities will reach a new high level, although the total accident rate shows a decline.

#### DEATH RATES PER 100,000 POPULATION, FIRST NINE MONTHS OF 1929, 1930, 1931—ALABAMA

Causes of Death:	WHITE			COLORED		
	Jan.- Sept. 1931	Jan.- Sept. 1930	Jan.- Sept. 1929	Jan.- Sept. 1931	Jan.- Sept. 1930	Jan.- Sept. 1929
All Causes of Death	878.2	914.0	1007.8	1377.8	1500.6	1644.2
Typhoid Fever	5.0	6.5	6.6	8.0	9.0	10.7
Measles	10.0	3.0	1.5	4.3	4.1	
Whooping Cough	3.5	7.6	8.6	3.3	15.3	13.2
Diphtheria	5.2	3.7	6.7	2.9	2.8	3.7
Influenza	42.7	30.1	130.8	50.0	41.9	166.5
Pneumonia—all forms	79.1	74.3	76.5	99.5	108.6	117.5
Tuberculosis—all forms	44.8	45.5	47.9	155.4	147.7	144.7
Malaria	4.6	6.3	8.9	10.4	14.3	20.9
Cancer—all forms	52.5	54.9	50.2	51.4	43.0	39.7
Diabetes mellitus	11.6	8.2	9.3	7.0	7.9	6.9

Causes of Death:	WHITE			COLORED		
	Jan.- Sept. 1931	Jan.- Sept. 1930	Jan.- Sept. 1929	Jan.- Sept. 1931	Jan.- Sept. 1930	Jan.- Sept. 1929
Pellagra	10.9	16.1	13.9	28.9	37.9	43.3
Cerebral Hemorrhage; Apoplexy	51.6	52.7	51.3	70.1	73.0	71.6
Diseases of heart	102.0	110.2	102.0	142.9	172.0	172.0
Diarrhea and enteritis	28.4	42.1	37.7	23.8	40.3	38.0
Under 2 years	21.3	30.6	28.0	18.1	30.1	29.0
2 yrs. and over	7.1	11.5	9.7	6.7	10.2	9.0
Nephritis—total	72.5	81.8	75.2	117.3	127.2	115.3
Puerperal State—total	14.7	14.9	15.6	22.4	23.6	28.5
Suicides	11.4	10.8	9.1	2.4	1.8	3.0
Homicides	11.1	7.0	7.1	37.6	37.7	32.4
Total Accidents	57.2	58.7	48.5	60.7	72.1	76.3
Auto. Accidents	19.2	18.0	18.4	14.7	13.8	12.9
Burns	5.3	4.6	4.6	10.7	9.8	10.7
Drowning	4.0	5.4	5.1	5.8	8.8	9.5
All other specified causes	209.5	229.4	249.1	275.6	316.5	207.4
Sudden Death; Unknown and ill-defined Causes	49.9	50.2	51.3	205.9	203.9	327.6

## CURRENT STATISTICS

### State Department of Health

#### PROVISIONAL MORTALITY STATISTICS

September 1931

	Number of Deaths Registered Sept., 1931			Annual Rate per 100,000 Population		
	White	Black	Total	Sept. 1931	Sept. 1930	Sept. 1929
ALL CAUSES	1101	950	2051	930.0	954.3	1060.8
Typhoid fever	15	12	27	12.2	11.9	11.1
Smallpox	2					
Measles	2	1	3	1.4	0.9	0.5
Scarlet fever	2			2	0.9	0.5
Whooping cough	4	4	8	3.6	4.1	6.5
Diphtheria	22	7	29	13.1	6.4	16.2
Influenza	8	11	19	8.6	6.0	9.7
Pneumonia, all forms	37	21	58	26.3	39.0	31.1
Poliomyelitis	1	1	2	0.9	2.3	0.5
Tetanus	4	3	7	3.2	1.4	2.3
Tuberculosis, all forms	50	135	185	83.9	68.3	81.1
Tuberculosis, pulmonary	47	121	168	76.2	61.4	71.9
Malaria	13	19	32	14.5	16.0	35.7
Cancer, all forms	84	32	116	52.6	56.9	52.4
Diabetes mellitus	19	3	22	10.0	5.0	9.3
Pellagra	21	11	32	14.5	26.6	19.9
Cerebral hemorrhage, apoplexy	63	54	117	53.0	44.5	67.7
Diseases of heart	118	113	231	104.7	113.7	119.6
Diarrhea and enteritis						
Under 2 years	45	9	54	24.5	36.2	27.8
2 years and over	10	4	14	6.3	11.0	8.3
Nephritis	94	81	175	79.3	82.1	74.6
Puerperal state, total	25	15	41	18.6	15.6	22.7
Puerperal septicemia	10	8	18	8.2	5.5	6.5
Congenital malformation	6		6	2.7	4.6	7.4
Congenital debility and other diseases of early infancy	68	33	101	45.8	52.7	69.5
Senility	13	20	33	15.0	15.6	21.8
Suicides	12	1	13	5.9	6.9	6.5
Homicides	10	30	40	18.1	22.0	16.9
Accidental burns	3	9	12	5.4	0.9	3.2
Accidental drownings	3	1	4	1.8	4.5	1.8
Accidental traumatism by firearms	5	3	8	3.6	4.5	6.5
Mine accidents	2	5	7	3.2	2.7	1.4
Railroad accidents	6	3	9	4.1	3.7	5.1
Automobile accidents	33	18	51	23.1	16.5	20.9
Other external causes	29	18	47	21.3	20.6	33.4
Other specified causes	215	124	339	153.7	161.9	169.2
Ill-defined and unknown causes	58	149	207	93.9	88.0	102.5



\*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1931 October	1931 Sept.	Total Cases to Date	
			This Year	Last Year
Typhoid	128	127	830	718
Malaria	495	373	2219	4067
Smallpox	9	3	291	179
Measles	31	26	9204	3706
Scarlet Fever	304	156	1359	1152
Whooping Cough	58	81	745	1635
Diphtheria	557	299	1535	1102
Tuberculosis	441	419	4467	3929
Pellagra	36	110	1146	570
Meningitis	7	5	209	118
Tetanus	7	5	43	40
Influenza	20	13	5800	2939
Dengue	0	1	2	12
Poliomyelitis	1	10	42	56
Pneumonia	47	34	2944	2479
Chickenpox	57	21	1586	1912
Mumps	63	13	1127	584
Encephalitis	1	4	42	28
Ophthalmia Neonatorum	0	2	11	18
Typhus	15	5	56	54
Trachoma	0	0	1	15
Undulant Fever	3	1	15	16
Tularemia	0	0	5	7
Rabies	0	1	2	4
Syphilis (private cases)	192	123	1448	1514
Chancroid (private cases)	13	5	74	75
Gonorrhea (private cases)	178	167	1413	1610

\*As reported by physicians and including deaths not reported as cases.

# County Society News

*(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)*

## BALDWIN COUNTY

J. Chason, Secretary

The Baldwin County Medical Society, with local members of the Woman's Auxiliary of the Association as guests, met at a luncheon engagement on November 5 at the New Foley Hotel. Dr. P. B. Skinner of Fairhope presented a paper on typhoid fever.

Officers chosen to serve the society during the approaching year are R. A. Hail, Robertsdale, President; P. B. Skinner, Vice-President; and J. Chason, Bay Minette, Secretary-Treasurer. Dr. C. G. Godard of Fairhope was re-elected a member of the County Board of Health.

Dr. J. W. Davidson, recently of Bibb County, has established his residence at Robertsdale. Dr. Davidson has been elected a member of the society.

The State Board of Health Regulations Governing the Production, Handling and Sale of Milk and Certain Milk Products have been adopted by the County Board of Health.

## BUTLER COUNTY

P. V. Speir, Secretary

Secretary Speir reports, "We have been pestered with chiropractors, cancer doctors, etc., for the past year. We rid ourselves of them when we can obtain evidence but others fill their places and stay with us until we get more evidence."

The society meets regularly on the first Friday of each month under the presidency of Dr. J. L. Bryan of Greenville.

## CALHOUN COUNTY

C. Hal Cleveland, Secretary

On November 3 the society held a public meeting in the auditorium of the First Methodist Church, Anniston, with Dr. J. N. Baker, Dr. J. R. Garber and Gen. R. E. Noble as speakers. Dr. Baker gave a resume of the work of the State Health Department; Dr. Garber read a paper on "The Doctor, His Office and the Patient". Gen. Noble, in his capacity as Chairman of the Board of Trustees of Garner Hospital, outlined the work of the institution—a municipal hospital. Gen. Noble called attention to the fact that Garner Hospital is now an accredited "A" grade institution. Dr. G. G. Woodruff, President of the society, presided.

## CONECUH COUNTY

W. F. Betts, Secretary

Dr. W. R. Carter, Repton, entertained recently the members of the Conecuh and Monroe County Medical Societies at an oyster supper. A paper on treatment of diabetes was presented by Dr. G. O. Segrest of Mobile. Dr. J. H. Baumhauer, also of Mobile, read a paper on hypoglycemia.

## CULLMAN COUNTY

R. B. Dodson, Secretary

Under the auspices of the Cullman County Board of Health, motion pictures on diphtheria and malaria were presented to the society at its regular monthly meeting on November 2.

At the October meeting of the society, Dr. F. L. Chenault of Decatur read a paper on Medical Ethics.

Doctors over the county are complaining of their inability to collect and have practically decided to render obstetrical service for cash only.

Dr. Gottlob Hartung, President Emeritus of the society, has recently celebrated his 88th birthday. Apparently Dr. Hartung is getting younger for he is reported as spry for one of his years.

HOUSTON COUNTY  
F. G. Granger, Secretary

Dr. and Mrs. T. L. Rennie have moved to Pell City.

The society held its regular meeting on November 6 at which time the members were the guests of the Houston County Health Unit at a banquet at the Houston Hotel. Dr. Douglas L. Cannon was the chief speaker.

JACKSON COUNTY  
M. H. Lynch, Secretary

Rayford Hodges, Scottsboro, and Carl F. Hartung, Bridgeport, attended the meeting of the Southern Medical Association, November 18-20, in New Orleans.

JEFFERSON COUNTY  
W. B. Hardy, Secretary

Drs. J. P. Robertson, Thomas Wolford, J. L. Hillhouse, J. Hurley Knight, J. D. Bancroft and Benj. F. Posey have recently become identified with the Jefferson County Medical Society.

LAUDERDALE COUNTY  
W. D. Hubbard, Secretary

The Lauderdale County Medical Society held its regular monthly meeting in the office of the County Health Department on November 3. Dr. A. A. Jackson read a paper on "Empyema" and stressed the danger of early operation.

The usual seasonal outbreak of diphtheria has served as an incentive for increased toxoid inoculations. The local health unit is pushing the work in the public schools and urging practicing physicians to push it among their infant and preschool clientele.

The secretary of the society reports: "The medical profession of the northwest section is carrying on under adverse circumstances. One of their greatest needs is an agricultural by-product automobile fuel that can be made at home economically and legally".

LEE COUNTY  
A. H. Graham, Secretary

At the November meeting of the Lee County Medical Society a symposium on tuberculosis proved a most enjoyable and academic treat for the society. The theory and known factors in tuberculosis were dealt with. Papers read were as follows:

a. Highlights on Tuberculosis—Dr. B. F. Thomas, Auburn.

b. Childhood Tuberculosis—Dr. P. W. Auston, Montgomery.

c. Adult Tuberculosis: Diagnosis, Prognosis, Treatment—Dr. T. D. Rivers, Montgomery.

d. The Public Health Program in Tuberculosis Control—Dr. A. H. Graham, Opelika.

e. Summarization and Discussion—Dr. B. S. Bruce, Opelika.

Dr. Auston's paper was illustrated by charts and x-ray films.

MADISON COUNTY  
W. G. McCown, Secretary

A well attended meeting of the Madison County Medical Society was held on November 10 with Dr. J. C. Pennington of Nashville as the guest speaker. Dr. Pennington's subject was "A New Vesical Neck Resector in Prostatic Hypertrophy".

Dr. W. G. McCown, Huntsville, attended the meeting of the Middle Tennessee Medical Association on November 5-6 at Fayetteville.

Dr. T. B. Wilson of Huntsville, who has been ill for several months, is greatly improved.

MOBILE COUNTY  
W. W. Scales, Secretary

Dr. Sidney Stuart Pugh, aged 68, died October 12 in New Orleans from cerebral hemorrhage.

Dr. R. W. Stallworth has been elected a member of the society.

Dr. L. C. Havens, General Director of the Laboratories of the State Board of Health, en route to New Orleans, made an inspection of the Mobile Branch Laboratory, November 18.

The Sixty-Fifth Consecutive Annual Session of the Association will convene in Mobile, April 19-22, 1932.



## Book Abstracts and Reviews

**Calcium Metabolism and Calcium Therapy.** By Abraham Cantarow, M. D., Demonstrator of Medicine in the Jefferson Medical College, Philadelphia. Lea & Febiger, publishers. Philadelphia. 1931. 215 pages, illustrated. Limp binding. \$2.50.

This book will prove a valuable addition to any library. Its author discusses in scholarly fashion the clinical and laboratory aspects of one of the most important inorganic constituents of the body.

It seems strange that, though our knowledge of the metabolism of complex organic foods is extensive and we have even solved to some degree the more difficult problems of the part played by vitamins in the metabolism of the body, we are still only beginning to solve the mysteries of the metabolism of inorganic salts. In the case of calcium, our problem was complicated by the fact that vitamin D and the internal secretion of the parathyroid played an important part in the assimilation and utilization of calcium salts. The interrelation of calcium, vitamin D, and parathyroid secretion is beautifully described in Cantarow's book.

The author has devoted a large part of his book to the part played by calcium in disease—in rickets, in tetany, in allergy, and in pregnancy. He has described the proper methods of utilizing calcium salts in the treatment of disease and has stressed the advantages of calcium gluconate over the chloride and lactate.

The exhaustive bibliography in the appendix gives ample proof of the fact that the author has thoroughly reviewed the literature.

The clinical pathologist will regret the fact that the author has failed to include a description of his technique for determining the calcium and phosphorus content of the blood.

A. T.

**A Manual of the Common Contagious Diseases.** By Philip Moen Stimson, A.B., M.D., Associate in Pediatrics, Cornell University Medical College; Attending Physician, Willard Parker Hospital; Chief of Staff, the Floating Hospital of St. John's Guild; Chief of Clinic, Department of Pediatrics, Cornell Clinic; etc. Lea & Febiger, publishers. Philadelphia. 1931. 353 pages with 40 engravings and two plates. Limp binding. \$3.75.

Every physician who handles contagious diseases will want to own at least one copy of this book, for it contains information that is indispensable. Its author has presented in concise form the latest opinions on every question relating to the diagnosis, prevention, treatment, and quarantine of the contagious diseases. Of particular interest are the descriptions of the Dick test, diphtheria toxoid as an immunizing agent, the Schultz-Charlton reaction in the diagnosis of scarlet fever, the use of convalescent serum in modifying measles, post-vaccinal encephalitis, meningococcus carriers, the early diagnostic signs of poliomyelitis and the use of convalescent serum in the treatment of this disease. There is a valuable table in the back of the book showing the period of incubation of each disease, the symptoms at onset, the differential features of the skin rashes, the period of isolation of the patient, and the length of quarantine of susceptible contacts.

The author gives specific details as to the care of patients with infectious diseases in the hospital

and in the home. He has devoted a chapter to what he calls "aseptic medical technique".

In the State of Alabama regulations regarding isolation and quarantine are those adopted by the American Public Health Association. Stimson has described in his manual the details worked out by the New York City Department of Health. The reviewer feels that a copy of this manual, placed in the hands of every physician in the State, would help greatly in the reduction of the morbidity of the contagious diseases.

The publishers should be complimented on the neatness of the printing and binding of this manual.

C. K. W.

**The Nurse's Medical Lexicon.** By Thomas Lathrop Stedman, A.M., M.D. 629 pages. New York, William Wood & Co., 1931. Limp binding. \$2.00.

In spite of its name and its lovely blue cover this book is only a dictionary, but it is a pleasure to handle a volume so well printed and bound. The book is intended primarily for nurses but should prove equally value for that all important individual—the doctor's secretary. In the appendix are tables of weights and measures, temperature scales, poisons and antidotes, and a table of infectious diseases.

C. K. W.

**Selections from the Papers and Speeches of John Chalmers DaCosta, M.D., LL.D., Samuel D. Gross, Professor of Surgery at the Jefferson Medical College, Philadelphia.** W. B. Saunders Co., publishers. Philadelphia. 1931. 440 pages. Cloth.

You have reached the end of a hectic day. Your mind refuses to take in the meaning of the journals that crowd your desk. You finger among your books for something lighter, something diverting, something soothing. Here is a volume to meet your needs. A great surgeon looks back over his years of accomplishments and tells you what he has seen, what he has heard, and what he has done. In this book, there are no technical articles. Each paper is an historical or discursive essay.

There is an interesting description of the old Blockley Hospital in Philadelphia as it was eighty years ago, when sepsis and anesthesia were unknown. A paper written in 1907 outlines the advances in medical science during the preceding century. Throughout the pages, great men of medical history move as if they were alive—Dupuytren, Velpeau, Lisfranc, Laennec, Claud Bernard, Magendie, Lugol, Maisonneuve, Marjolin, Baron Larrey, Keen, the Grosses, and Crawford Long.

The younger physician, just embarking on his career, will gather words of wisdom from the papers in which the author sets forth the trials and tribulations of the surgeon. DaCosta describes the life of a surgeon, the pitfalls that beset him, the causes of failure, and the qualities necessary for success. He gives excellent advice as to the conduct, the training, and the work of aspiring surgeons. As one reads, one is impressed by the author's wide range of knowledge, his love of books, and his keen understanding of human beings.

C. K. W.  
D. E. W.

# THE JOURNAL

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## MATERNAL EXHAUSTION\*

J. R. GARBER, M. D.  
Birmingham

All too frequently, in the discharge of medical work, the physician is on the lookout for major complications, neglecting the proper appraisal and failing to take time enough to look for definite indices of minor complications that are ominous and freighted with far-reaching and serious forebodings,—serious and portentous, because, like the oak that springs from the small acorn, these insidious and apparently innocent beginnings lead to unsuccessful end results of embarrassing and disquieting proportions. Especially conspicuous is this attitude in obstetrics. In prenatal work the main objective seems to be prevention of toxemia of the eclamptic variety, while in labor the dominant issue revolves about the response of the cervix to pains. As an explanation of and to develop the predicate of this paper, as just outlined, let us discuss the problem of maternal exhaustion in obstetrics.

This condition is an obstetrical entity as it possesses etiological factors, has a symptom complex, boasts of sequellae and maintains a treatment rationale. To argue to the contrary simply blights initiative, sounds the death knell of scientific advancement, spurns caution and cheats mankind.

Anorexia, restlessness and sleeplessness are the prime factors in the causation of maternal exhaustion. This triumvirate of symptoms is the outgrowth of the reaction of labor upon the maternal organism. The physical powers of the woman ebb in a direct ratio to the shock induced by travail

and in addition to the demands made upon the mere material substance, the psychic element unquestionably introduces a brilliant color to the picture. The frequent recurrence and increasing duration of pains disturbs the rest, which in turn inhibits sleep. As a result of pain the appetite is lost and in addition to the lack of desire for food, vomiting contributes its part to the depleting process. Distraught from the imperious demands of nature, the patient in labor is a potential pathologic product and as such indisputably and vividly encourages the unqualified endorsement of the mental process that argues that for effect there must be a cause. Truly, the woman in childbirth is in a vicious circle that can so readily create an imbalance in the equation of supply and demand.

Still another triumvirate represents the means of recognizing maternal exhaustion. Not by word of mouth on the part of a tortured patient or an anxious relative need the physician depend for information, but solely upon clinical findings should he be guided. The temperature, pulse, respiration and blood pressure are the beacon lights of diagnosis. A temperature of 100.5 or over; a pulse rate of 120 or over, in conjunction with its character; an increased respiratory count and a drop in blood pressure invariably indicate the onset of exhaustion. These symptoms are removed from the effects of deliberate wilfulness and for this reason are reliable and significant. Some of you may not agree with this last statement and for the nonce the point is conceded. It is refuted, however, with this statement: A pseudo-exhaustion precipitated by well executed action will eventuate into a pathological condition comparable to a run on a bank resulting from innuendo and acts of money withdrawals by

\*Read at the meeting of the Northeastern Division of the Association, Florence, August 13, 1931.



the depositors. As the bank reacts in one instance so does the maternal organism in the other.

A careful observation of the temperature, pulse, respiration and blood pressure must be maintained throughout labor as upon these the keystone foundation of maternal exhaustion must rest.

The sequellae of maternal exhaustion are of sufficient interest and importance to be reviewed. Perhaps a better way to discuss these is to point out the conditions to which exhaustion predisposes. In this analysis, hemorrhage due to uterine relaxation, vasomotor shock, cardiac syncope, psychoses and infection sum up the whirlwinds of unpleasantness and disaster that the attendant must circumvent.

Exhaustion is synonymous with lowered resistance that renders the obstetrical subject an easy prey for the invasion of bacterial hosts. The natural forces of labor exact a frightful toll of energy, resulting in a significant biochemical change in muscular tissue. Superimposed upon this spontaneous and uncontrollable phase of labor is the technique of conducting labor which so frequently adds fuel to the fire. Then, is it unreasonable to hold that the uterus, a muscular organ, loses its tonicity with subsequent relaxation; that traumatized and lacerated soft structures are incapable of developing barriers to invading organisms that quickly get the upper hand in a devitalized body; that vasomotor shock and heart collapse resulting from a wicked assault upon vital centers and, then mental derangements savagely spurred on by a ceaseless vibration and by maddening phobias? Is it unreasonable to hold that the sequellae of maternal exhaustion should be a Christianizing factor in the life of the obstetrical attendant and call into the fold of safety and progress those performing such duties? And apart from these grave problems the important feature of proper breast feeding enters into consideration. The mother protected from a consuming debility during labor, has a rapid return to normalcy and approaches lactation well-groomed and fortified. There is no fever, no weakness, no mental shock, nothing to interfere with relaxation of body and happiness of mind. Interest is manifested in the baby and because of the mother's good condition valuable co-operation can be ren-

dered by her and the welfare of the child promoted. Is this worth while? Has it an appeal?

Combating maternal exhaustion finds the front line of defense centering around prophylaxis. Were a grand opera ever written depicting an obstetrical story, the overture, the theme songs and the grand finale of the musical opus would be soul stirring music ringing aloud the glad and rejoicing alleluias of prophylaxis.

Wherein and by what means does prevention exist in this discussion? First: *In the prenatal period.* During the prolonged weeks of gestation and by mutual understanding, the physician and patient must faithfully and rigidly execute a pregnancy hygienic regime that will insure a maximum and sane physiologic function of the maternal organism. The physician, being unable to raise the veil of the future for a premier sight of such secrets, must anticipate complications of labor. He must guard against postmature babies by proper diet, exercise and elimination. By the same chart he must prevent obesity that does not necessarily signify endurance and that leads to toxicity. He must have the woman in as good general condition for the grueling strain of parturition as is the pugilist, when he enters the ring for a supreme test. It matters not the individual program employed for such ends, but it is mandatory and obligatory that such be accomplished.

Second: *During labor.* At this time it is axiomatic that the medical attendant and patient will reap what they have sowed. The zero hour for these two and the unborn child has struck; time cannot be retraced nor can a loan from the future be made. Then, the sinister spirit of many complications, and particularly of maternal exhaustion, must not be allowed to wield its malediction, nor show its face to haunt the living or chant a requiem to the dead. Again, it matters not the rule of thumb used to obtain success, but matter it does when the physician renounces basic principles and fails to apply knowledge and skill. The following are mentioned as a formula for the treatment of maternal exhaustion:—

- (1) Combat anorexia by the frequent administration of fluids during prolonged labor.

- (2) Combat sleeplessness by judicious narcosis and isolation.
- (3) Combat restlessness by narcosis and isolation.
- (4) Combat full stomach, bladder and rectum for added comfort, safety and rest.
- (5) Combat the vicious, stupid and prolonged use of pains.
- (6) Combat shock at the time of delivery with surgical anesthesia.
- (7) Combat the excitement, advice and anxiety of the ever-present gallery of onlookers.
- (8) Combat perilous technic, of any nature, that jeopardizes the patient.

There has been a presentation of only the essential points of this interesting subject, the minutia of detail being left to follow in the wake of an aroused initiative. With maternal mortality statistics still teeming with indictments against the obstetrical attendant, it is within the purview of the honorable discharge of our duty that we review obstetrical subjects, irrespective of their elementary nature, and add to the mental equipment that has many outlets for practical application. It is with this end in view that this message has been brought to you today.

1117 S. 22nd Street.

### EXOPHTHALMIC GOITRE\*

FRED WILKERSON, M. D., F. A. C. P.  
Montgomery

This peculiar disease, although baffling in its etiology, is one of the easiest medical conditions to recognize when it exists in pronounced form. If one sees a very nervous patient with wide, staring, protuberant eyes, rapid pulse, marked restlessness and talking steadily in staccato fashion, the diagnosis can be made at a glance. Unfortunately, though, not all cases are so typical and its recognition often requires all our diagnostic acumen.

Exophthalmic goitre apparently bears no relation to the colloid or adolescent goitre that is endemic in different areas, and is itself not so prominent in these geographical regions as in others where colloid goitre is not endemic. It seems to have no

geographical distribution, except that it is more frequently seen in the highly civilized races than among the lower orders and savages. Colloid goitre does not tend to develop into the exophthalmic type, though it does predispose to the development of adenomas.

An interesting fact about exophthalmic goitre is that it cannot be experimentally produced in man or in animals, which is, perhaps, one reason we know so little about its causation. There are more cases in people under forty than over, and women are affected much more than men, the ratio being probably as high as 5 or 6 to 1. Hyman and Kessel state that exophthalmic goitre is a "further development of autonomic imbalance and neuro-circulatory asthenia are practically synonymous terms and these authors claim that to the already existing nervous disorder is added a functional thyroid abnormality, with its particular symptoms. There is general agreement that the disease occurs often in persons of a neuropathic tendency and that some psychic trauma usually plays a part, but the exact mode of action is unknown. Means and Richardson state: "Persons who acquire exophthalmic goitre are predisposed to the syndrome by some inherited or acquired inferiority, and whether we call this autonomic imbalance or something else matters very little, for the name we give it throws no light on its nature."<sup>2</sup> There are controversial theories as to whether there is an excess of a normal secretion, or whether the secretion is abnormal, but time does not permit discussion of these.

The pathology of the disease is that of a parenchymatous hyperplasia. There is a diffuse enlargement and marked vascular engorgement. Histologically there is an increase in the height and number of the epithelial cells. There is a diminished amount of colloid. Often there is lymphoid infiltration in the interstitial tissue and in long standing cases, increase in the connective tissue. Outside the thyroid there is an increase in the postorbital fat and engorgement of the vessels behind the eyeballs. Sometimes there is a persistent thy-

\*Read by invitation before the Jefferson County Medical Society, October 5, 1931.

1. Hyman and Kessel: J. A. M. A. 96: 2014.

2. Means and Richardson: Oxford Monographs on Diagnosis and Treatment, 4: 137.



mus and rarely status lymphaticus with enlarged spleen and lymph nodes.

The symptoms of the disease are due to the extreme irritability of both the central and vegetative nervous systems and to the hyperthyroid condition as well. Goitre, exophthalmos, tachycardia, and tremor have come to be considered as diagnostic of this condition and well they may be, but many times they do not coexist and there are other symptoms of importance. The gland is usually—but not always—enlarged a firm, smooth, symmetrical enlargement, as a rule not of great size, though exceptions do occur. There is nearly always a systolic bruit over the gland, easily elicited with the stethoscope. The eye signs, which are most striking, are the “protruding globe of Parry, Graves and Basedow, the wide fissure of Stellwag, the lid lag of Von Grafe, the poor convergence of Moebius, and the infrequent winking of Dalrymple.” To me the exophthalmos and the lid lag are the most valuable for they are the easiest to elicit. Exophthalmos occurs in from 50-65 per cent of the cases and next to nervousness and tachycardia is probably the most common symptom. Its absence is likely to cause the diagnosis to be missed as in a case recently seen. This was a man of 60 complaining of weakness and loss of weight. The examination revealed marked arteriosclerosis, but nothing else of consequence and this was the diagnosis made. There was no exophthalmos, no undue tremor, no tachycardia, his resting pulse rate being 80. The weight loss continued, however, and it was noted at two or three subsequent visits that his pulse rate was 100 or over. This led to a basal metabolism test and the rate was found to be plus 39. Improvement was prompt on Lugol’s solution. Exophthalmos should always be distinguished from congenital prominence of the eyes, so-called “pop-eyes”.

The extreme nervousness, restlessness and mental excitability of these patients is characteristic. They talk constantly, rapidly, often brilliantly, they cannot sit still and they are in almost ceaseless motion. They are more extremely animated than in any other condition I know, and before muscular weakness has set in, they have unbounded energy and great self-confidence, quite in contrast to the patient with neuro-circulatory asthenia.

Among the hyperthyroid symptoms are the marked increase in the circulation as shown by tachycardia, palpitation, dyspnea and, in late cases, auricular fibrillation and congestive heart failure. The tachycardia is characteristic, for the pulse rate is persistently rapid, even in sleep, which differentiates it from the rapid pulse so often found in purely functional nervous conditions. Most authorities feel that a resting pulse rate of 70 precludes the possibility of exophthalmic goitre. Along with the rapid pulse there is often a marked palpitation, extremely annoying to the patient. There is usually no great increase in the blood pressure, but a disproportion between the systolic and diastolic pressures, with a rather high pulse pressure. The great strain on the circulation sooner or later begins to tell and eventually auricular fibrillation develops, at first paroxysmal, later becoming permanent unless treatment is instituted in time. Congestive heart failure is not uncommon in late cases, but it is remarkable how much these apparently serious heart complications will improve under correct therapy. A surprising thing is the comparatively small amount of hypertrophy that develops in these thyroid hearts.

Weight loss, in spite of a ravenous appetite, is a valuable symptom and should always cause exophthalmic goitre to be suspected. Marked flushing of the skin and heavy sweating are characteristic. These patients suffer intensely from the heat and are usually miserable in the summer.

Marked increase in the basal metabolic rate is practically always present and is of great diagnostic value, although the advent of this method of examination has not been an unmixed blessing by any means. Many people, on the strength of a single test or tests improperly performed, have had unnecessary operations. There are many possible errors in the performance of a metabolism test, such as failure to perform the test under basal conditions, errors in technique and in computing the result, etc. A single test means little, its chief value being to allay the patient’s fears so that a second test may be accurate. We never rely on a single test unless we are satisfied that it was properly done and *unless* the result fits in with the clinical findings. If there is any discrepancy we

rely on the clinical facts and run two or more tests until we are assured. Even then if there is a marked disagreement we rely on the other findings. Nevertheless, a correctly done test is of considerable value and the metabolic rate should be found in all cases, not only for diagnostic purposes, but as an aid in the subsequent management of the case.

A frequent and often important symptom is a painless diarrhea. I recall a case seen several years ago in which diarrhea was one of the earliest symptoms. There was no exophthalmos but the diagnosis was made on the diarrhea, tachycardia, loss of weight and heightened basal metabolic rate. Amenorrhea occurs rather frequently.

The prompt improvement on the administration of iodine is a valuable sign. Almost immediately the nervous symptoms improve, the heart slows down and the basal metabolic rate drops, quite in contrast to the lack of effect of iodine in the various functional nervous disorders.

This condition is to be differentiated from other thyroid diseases, such as colloid goitre and toxic adenoma, from functional nervous disorders and rarely from incipient tuberculosis. The nervous young woman with a colloid goitre is probably the most frequent victim of a mistake in diagnosis, for many a colloid goitre is unnecessarily removed under the mistaken opinion that it is the cause of the nervous symptoms. I have recently seen such a case. Careful study should enable the correct diagnosis to be made.

The disease runs a variable course, lasting several years if untreated. Hyman and Kessel state that the tendency is toward spontaneous recovery in 60-70 per cent of patients under 35, if they can have the benefit of favorable social and economic conditions. Spontaneous recovery is more rare in those over 35. Characteristic are the periods of exacerbation and remission. In the cases that recover spontaneously there is a gradual lessening of the frequency and severity of the exacerbations, with amelioration of the symptoms, so that after 4 or 5 years there may be complete restoration to health. It is really astounding how ill some of these patients can be and yet recover. I remember a young woman I have seen many times on the streets of Montgomery.

She was a living skeleton, with a huge diffuse enlargement of the thyroid, the most marked exophthalmos I have ever seen, and was apparently headed for certain and rapid dissolution. Whether it was because of or in spite of her method of treatment—she was a Christian Scientist—she is now well, and except for a moderate residual exophthalmos and a slightly enlarged thyroid she is a very healthy looking person.

Unfortunately, though, many cases do not end so happily, and without treatment they grow worse and die in a crisis of uncontrollable nausea and vomiting, with acceleration of all the symptoms. These crises, formerly the bugbear of the surgeon, are now fortunately rare, thanks to Plummer and his demonstration of the value of iodine as a preoperative procedure.

Plummer is really responsible for practically revolutionizing the treatment of exophthalmic goitre and I think now it is generally felt that the best treatment is subtotal thyroidectomy in an iodine remission. The surgeon and internist should work together, however, for these patients need medical care postoperatively for a number of months until their shattered nervous systems are restored and they are competent to take their places in the world again. They should not be turned adrift as soon as their surgical convalescence is over.

The most valuable medical measure is rest, both physical and mental, which will often bring about a cure alone if carried out over a period of several years. Even if surgery is to be resorted to, preoperative and postoperative rest are indicated just the same. There should be the most complete regulation of the patient's life and she should be protected from psychic traumata as well as from physical fatigue. Along with this there should be a high caloric diet to compensate for the heightened metabolism of the disease.

Iodine in the form of Lugol's solution, or some preparation containing an equivalent amount of the drug, is of value not only in bringing about a remission and thus preparing a patient for operation, but is of great value postoperatively. Most recurrences can be satisfactorily controlled by iodine alone without a second operation. I have under observation a young woman who had a subtotal thyroidectomy 5 years ago. Then 2 years ago she had a marked



recurrence, promptly controlled by Lugol's solution. At intervals for a year she had to take Lugol's, but she has been in perfect health now for two years. The average dose of the drug is about 10 drops three times daily, but in severe crises 90-100 may be necessary. Unfortunately iodine frequently loses its effect after several weeks and patients become refractory to it so it should not be used too long continuously. After an interval of 3-4 weeks in the majority of cases, however, it may be resumed with beneficial effect.

Prior to the iodine era, x-ray therapy was tried extensively. It was never entirely satisfactory, was attended by some risk and is now not used a great deal. I think its use today should be reserved for those rare postoperative recurrences that cannot be controlled by iodine alone. I have one patient, a man in his fifties, apparently refractory to iodine, who made an excellent recovery four years ago under x-ray treatment.

The best treatment for the cardiac complications is iodine and early operation, followed by good postoperative care. The treatment of auricular fibrillation and congestive heart failure does not differ materially from the usual procedure in these conditions.

In conclusion, while the internist and surgeon separately may attain fairly good results, teamwork and close cooperation will enable them to do much more for the victims of exophthalmic goitre than either can do alone.

## SUMMER DIARRHEAS IN INFANTS AND YOUNG CHILDREN\*

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The study of summer diarrheas of infants and young children is as interesting as it is perplexing. There have been so many changes in one phase or another of the subject and so many different classifications that many pediatricians and most general practitioners have found themselves running around in a vicious circle wondering what it was all about.

Since the earliest attempts at classification according to symptoms by the French

pediatricians, Delord (1837) and Velikes (1838), and the attempt at anatomical classification by Wiederhofer of Vienna 50 years later, there have been terms applied to this condition too numerous (and useless) to mention. There was a bacteriological era and a metabolic era. These were followed by a classification of nutritional disturbances by Finkelstein, and also by Czerny and Keller.

Finally pediatricians began to believe that a classification was not entirely necessary and that the therapeutic management of the condition should receive some study. The mortality from the disease was enormous. They began to realize that infants suffering from intestinal disturbances were often starved too long and that the purgatives were too often abused. Marriott pointed out the acidosis which was caused by this starvation and the associated dehydration, and as a consequence treatment of the toxemia, acidosis and dehydration was instituted. This might well be termed the "golden era" of the summer diarrheas.

### CLASSIFICATION

Classification, while not absolutely essential, is desirable. The one which I shall use is, in my opinion, the simplest and most satisfactory of those now in use.

1. Fermentative or saccharolytic.
2. Putrefactive or proteolytic.
3. Infectious, resulting from bacterial invasion of the intestinal tract where local resistance has been lowered. The dysenteries are included in this group.
4. Acute intestinal intoxication, due to virulent food poisonings. This is analogous to the old cholera infantum.
5. Mechanical diarrhea, due to irritation from raw or improperly cooked foods, or food that has not been chewed or sufficiently subdivided before feeding. This type can usually be corrected very easily by a purgative and a bland diet.
6. Infantile atrophy (marasmus, athrepsia). This is usually a sequela of one of the other types, caused primarily by dehydration of the body cells to such an extent as to cause changes in these cells which prevent them from assimilating the end products of digestion. Parenteral infections are usually fatal to these infants due to their lowered resistance.

\*Read at a meeting of the Bullock County Medical Society, Union Springs, August 26, 1931.

Fermentative diarrhea constitutes a large proportion of summer diarrheas. This type is rarely sudden in onset. Usually there will have been a prodromal period during which the child regurgitated a greater or smaller amount of sour, watery fluid about an hour before meals, and there is also usually some preceding abdominal discomfort. The buttocks are usually excoriated. There is no toxemia and but little fever until the child begins to show the effects of dehydration. This type is usually seen in infants under one year of age; they are most often bottle fed and have been receiving too much sugar. The stools are numerous, foamy, acid, watery, irritating to the anus and buttocks and have a sour odor.

Proteolytic diarrhea is characterized by frequent movements of brownish or yellowish stools, semi-solid, liquid or mixed in consistency. There is usually a very foul odor and they have an alkaline reaction. This type is usually seen in children over one year of age. The intermittence of the diarrhea in this type is a prominent feature; 2 or 3 days of diarrhea may even be followed by a day of comparative constipation. There is usually marked anorexia in these children.

The infectious diarrheas and acute intestinal intoxication present a somewhat similar picture. There is a destruction of the intestinal mucous membrane as evidenced by the appearance of blood, pus, epithelium and masses of necrotic tissue in the bowel movements.

#### PREVENTION

The unanimous opinion of pediatricians is that the one most valuable preventive measure is in the encouragement of breast feeding. Next to this, the boiling of all milk used in infant feeding, regardless of its source, has been a large factor in the prevention of summer diarrheas. Overfeeding during warm weather and parenteral infections play about equal parts as causative agents of diarrhea; it is now generally accepted that diarrhea is often a secondary manifestation of an infection elsewhere in the body. Breast fed babies are as susceptible as artificially fed ones when parenteral infections are the primary cause.

#### TREATMENT

There are certain general principles of treatment which are common to all the

different forms. It should be borne in mind that any of them may suddenly present a high fever with convulsions. It should also be remembered that the diarrhea and vomiting, with the resulting dehydration and starvation are the cause of the acidosis which may develop and prove fatal. The clinical picture of this, once seen, is always remembered—loss of weight; the face is grayish white, pinched and sunken; the lips are bright red; the eyes are half closed with internal strabismus in one; respirations are of the deep gasping air hunger type; the thighs are flexed on the abdomen which is markedly retracted; the skin has lost its turgor and the arms are drawn up and the fists clenched. This picture of impending death is truly a gruesome one.

*Elimination*—It is now generally agreed that drastic catharsis is not necessary and is even unwise. If the child is seen in the first 24 hours give a good dose of castor oil if there is no vomiting; if vomiting is present give from one-tenth to one-fourth grain of calomel every 15 to 30 minutes until one to one and a half grains are given. This may be followed by oil. Great care should be taken about giving further cathartics after the initial purgation.

The mustard bath or pack is an excellent means of promoting elimination through the skin and has the added advantage of lowering the temperature and decreasing the nervous irritability which often ends in convulsions. Enemas if used at all should be given at the beginning and not repeated too often. *Do nothing that is not absolutely helpful to the patient.* The less they are handled the better off they are.

*Acidosis*—The acidosis is usually caused by dehydration and starvation. Hence if food is withheld it should be for a very short time. The most important feature in the prevention and treatment of acidosis is insuring a normal water equilibrium. Alkalies are still used by some pediatricians, and they unquestionably are of some benefit. Dextrose solutions intravenously are of much more value than the alkalies in combating acidosis. Where vomiting is persistent gastric lavage with an alkaline solution is indicated.

*Dehydration*—As this is one of the chief causes of acidosis it can readily be seen how great is the importance of supplying



plenty of fluid. In the milder cases and where there is no vomiting the water equilibrium can be maintained by giving water by mouth. In many cases, however, this does not suffice and fluid must be supplied under the skin, intravenously or intraperitoneally. Rectal infusion is not satisfactory. Normal salt solution or Ringer's solution may be given by any of the above named methods. The amount of fluid given varies with the size of the patient. In small infants 100-200 cc. may be given and repeated in 12-18 hours. In larger infants 300-400 cc. may be injected.

*Feeding*—Many pediatricians still consider the complete withdrawal of food desirable. If this is done the period of starvation should rarely exceed 12 hours. Fluids should be forced during this period. The Germans advocate using weak tea sweetened with saccharine. This is perhaps as good as any thing that can be used, and has the added advantage of acting as a mild stimulant.

In the fermentative type of diarrhea protein milk is used. There are several proprietary powdered milks on the market which are easy of preparation and reasonable in price. If protein milk is not obtainable, buttermilk may be used. Protein milk has only about one half the caloric value of cow's milk, but for the first few days this fact is not of importance. The initial amount of protein milk should be from 1 to 1½ ounces, 6-10 times a day. This should be continued for several days, and then gradually increase as the symptoms abate, until the baby is receiving about 4 oz. of milk to the pound of body weight per day. The total amount should not exceed 32 oz. per day. It should be borne in mind that protein milk is purely a therapeutic measure, and should by no means be used for routine feeding. For the first day or so no sugar should be added to the milk. If the bowel movements improve carbohydrates may be added. This should be the one that is most easily assimilated, so dextri-maltose is the carbohydrate of choice. 1 per cent should be added at first cautiously increasing the amount to 7 per cent. At times it is necessary to cut out the sugar and go back to the original feeding. This is a question that has to be decided in individual cases and one should be guided by the condition of the bowels. The

transition to whole milk should be very gradual. At first one-fourth boiled skimmed milk should be added, and this gradually increased to boiled whole milk over a period of a week or so. Lactic acid milk instead of whole milk is a valuable measure at this point. In changing from protein to cow's milk many use calcium caseinate to increase the protein content of cow's milk.

In the putrefactive diarrheas a lactose solution should be used for the first 24 hours. This is prepared by adding 2½ oz. of lactose to 30 oz. of boiled water. Give this solution every 2 hours; water or saline solution should also be given. After the first 24 hours malted milk and the starchy foods should be given. Mellins food is exceptionally good in the dietary treatment of this type of diarrhea. 4 or 5 feedings at four hour intervals should be given. As a rule quite a free diet should be used—farina, cream of wheat, cream of rice, barley flour, flour ball. Older infants may also be allowed unsweetened zwieback, stale bread toasted, saltines, arrow root crackers, etc. This is also the diet of choice in most cases of infectious dysenteries. Cases of intestinal influenza may be treated as putrefactive diarrheas. An important factor in the dietary regime is the thorough cooking of the cereal gruels or thick cereals. Milk should not be added for one or two weeks. Then you may begin adding small quantities of top milk to the diet, and very gradually change to whole cow's milk. Raw milk should never be used in the treatment of diarrheas. Potato, on account of the peculiar character of the starch capsule, is difficult to digest. It should be one of the last foods added.

In recent years the use of almond milk and almond milk-whey mixtures has come into vogue. They are highly recommended by some pediatricians.

Heisler and Moro of Germany have used with much success, an apple diet. This is said to give excellent results in diarrhea of any etiology. I think it worth while to describe this treatment in detail. Raw apples peeled and cored are used—they should be grated on a glass grater. The apples must be very ripe and soft. 100-200 grams (1-2 medium sized apples) of the apple pulp are given at each meal for 2 days—larger children may be given 300

gms. The important factor is that nothing else must be given. Water balance must be maintained, as in other forms of treatment.

It is claimed that the diet has a prompt effect in practically 100 per cent of the cases. The diarrhea and vomiting stop, and formed stools usually appear on the second apple day or when normal food is again given. After the two apple days, an intermediary diet, high in protein and poor in milk and vegetables, should be given for 2-4 days. The following has proved to be the best:

**Breakfast:**

150-200 gms. of cocoa in water or  $\frac{1}{2}$  milk and  $\frac{1}{2}$  water, and 1 dry zwieback.

**10 A. M.:**

1 raw yolk of egg with lemon and sugar.  
1 ripe banana.

**Lunch:**

Meat broth with rice and meat. 1 banana.

**3 P. M.:**

Same as breakfast.

**Supper:**

Arrow root soup ( $\frac{1}{2}$  pint water, 10 gms. cane sugar, a pinch of salt, 15 gms. arrow root: this boiled for 15 min.)

In rare cases, if the intermediary diet has not been used, there may be a slight relapse under the normal diet, which yields spontaneously or to 1-2 more apple days. Following this the normal diet may be resumed.

This diet is said to work equally well in adults with diarrhea.

"Heisler considers first of all the fruit acids, then the mechanical cleansing of the intestine, and last of all the tannin content of the apples as being responsible for the success of this method."

I have used the apple diet in 2 patients with excellent results. The first, a baby 17 months old, had had diarrhea one day when first seen. There were 20 or 30 green liquid stools per day. The axillary temperature was 103.6°. Examination was negative except for a cold which the baby had had for several weeks. An initial dose of castor oil was given and no food was given for 16 hours. Water was forced. Following this the baby was put on buttermilk. The buttermilk and water were taken very

well, but the following day the temperature was even higher and the baby had several convulsions. Mustard baths had been used from the onset. The baby began vomiting, blood was passed in the stools which showed no improvement. There was considerable tenesmus, and the general condition of the baby was decidedly worse. The apple diet was instituted on the fourth day of the illness. On the first apple day the vomiting ceased, the baby took the apple with much relish, the stools decreased to 10 and the contents consisted at first of green mucous, later of the apple as given. On the second apple day the tenesmus ceased, the stools were reduced to 4 and these were mostly formed, the temperature was 100, and there was a decided improvement in the general appearance of the baby. The next day the high protein diet was begun. This was continued for four days, and then the baby put back on a normal diet. There was a progressive improvement in the condition of the patient and there has been no recurrence of the diarrhea.

The second patient, 18 months old, had 12 loose stools per day, tenesmus, and temperature of 102°. The apple diet was begun immediately, and on the first day there were one loose and two formed stools, and a normal temperature in the evening. The second day there were two formed stools. An uneventful recovery followed.

**Medication**—I feel that diet is the important factor in the treatment of diarrheas. Medicines are of secondary importance.

The three drugs that have proven of greatest value are castor oil, bismuth and opium.

At the onset castor oil may be given to rid the intestinal tract of the toxic material. Later in the disease it should be used with great care, as the increased peristalsis caused is harmful to the inflamed mucous membranes of the intestinal tract.

Bismuth subcarbonate in full doses may be given in an attempt to check the diarrhea and for its supposed healing effect on the mucous membranes. 10 to 20 grains every 2 hours may be given to a child one year of age.

Opium should not be used routinely, as it frequently does great harm by causing a retention of toxins. However, after the



initial purgation and the intestinal tract is relatively free of toxins, if the diarrhea is excessive, the tenesmus great and restlessness extreme, opium is of great value in allaying these symptoms. Nothing requires nicer discrimination than the use of opium in diarrhea. When used it should never be added to a diarrhea mixture, as absolute control, through accurate dosage, must be maintained.

Stimulants are often required in severe cases. Caffein and adrenalin are the drugs of choice to combat circulatory failure. Brandy or whiskey are excellent stimulants. Strophanthus is to be preferred to digitalis.

As before stated the mustard bath or pack is the most satisfactory treatment of hyperpyrexia and convulsions. Bromide and chloral are of value in the treatment of convulsions.

With the exception of maintaining the water balance, no one thing is as essential in the treatment of diarrheas as absolute rest for the patient. Noise or excitement around the patient, and excessive and useless treatment or handling have too often been the deciding factor in fatal cases.

In the treatment of dysentery 200 cc. or more of a polyvalent serum should be given in doses of 50 cc. intravenously every 5 or 6 hours, or until there is an improvement in the child's condition. It is well to dilute the serum with glucose solution in order to overcome the dehydration. After the diarrhea is checked, it is well to starve the patient for 12-24 hours and give a large dose of castor oil. This inhibits the activities of the spore-bearing organisms presented in the intestine and cleans the large mass of detritus out of the bowel. During this period fluids should be forced. Following this period of starvation the patient should be put on a carbohydrate diet.

Hypodermic injection of emetine in bacillary dysentery is an excellent adjunct to the dietary and symptomatic treatment.

The treatment of infectious diarrheas in the breast fed infant is the same as in the bottle fed, with the exception of the feeding. There should be an initial period of about twelve hours when the infant is kept off the breast and water forced. After this initial starvation the time of feeding should be limited and the intervals between nursings increased. For a few days it is wise to give the baby water just before it

nurses, so as to dilute the milk. This is also an important procedure in the later stages of the disease where there is much slough and pus in the bowel movements and where there is excessive flatus. If the baby is too weak to nurse, the milk must be expressed and fed diluted. Gavage or feeding with a Breck feeder may be necessary. The mother's breasts must be emptied at regular intervals, and for this purpose hand expression is more satisfactory than using the breast pump.

Finally we may say that at best the treatment of summer diarrhea in the infant and young child is still at times an extremely difficult problem. The three things that should be stressed and ever borne in mind are toxemia, dehydration and acidosis.

I claim no originality for any thing in this paper, but I do practice what I have advocated herein. I have had several cases recover that, if treated by the older methods, I believe would have died. The textbooks are excellent for reference work, but none of them stress the life-saving methods that would help the small town or country doctor. I believe that every town should have a good pediatrician and that he should be given all the encouragement possible.

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## DIVERTICULITIS OF THE CECUM\*

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Solitary diverticulitis of the cecum is a condition rarely encountered in the practice of abdominal surgery. However, the condition does occur and when inflammatory reaction takes place it produces symptoms which should be considered in the differential diagnosis of right-sided abdominal lesions.

Cases of solitary diverticulitis of the cecum have been reported by French, Jackson, Moschowitz, Pereire, Cooke, Greensfelder and Hiller. Hiller has reported four cases of traumatic diverticula. Two occurred in 5385 operations and two were found in 400 autopsies.

The etiology, pathology and symptomatology of solitary diverticulitis of the cecum are essentially the same as accompany diverticulitis elsewhere in the colon.

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\*Read at the meeting of the Southeastern Division of the Association, Geneva, August 11, 1931.

Diverticula of the intestines may be divided into two general classes, congenital and acquired. Congenital diverticula are sacculations composed of all the structures normally found in the wall of the bowel, such as Meckel's diverticulum and the vermiform appendix. The acquired are those developing during the patient's lifetime and are usually a protrusion of the mucosa through the musculature and are composed of mucosa and peritoneum only. Occasionally there is also some remnant of the muscular layer of the bowel wall which is greatly thinned out.

### *Etiology*

There is considerable disagreement as to the etiology of acquired diverticulosis. Some authorities, among whom Klebbs was the first, have advanced the theory that they form along the edge of the mesentery where the blood vessels pierce the muscular coat of the bowel. Others believe that they are the result of the pull of the mesentery. Drummond has shown that there is very good evidence to support the first of these theories. Points of entrance of the vessels represent weak places in the bowel wall in much the same way that the place of exit of the spermatic cord represents a weak place in the abdominal wall. Telling states that beyond doubt diverticula are the result of increased pressure from within the bowel and that constipation and flatulent distention play an important role in their formation. Beer, in 1904, following his experiments, stated that there is some change in the resistant power of the intestinal wall and there is consequently muscular deficiency. This probably accounts for the formation of acquired diverticula.

It seems to me that it is reasonable to assume that they are due not to any one cause but to a combination of causes.

First. They may be due to an inherent weakness in the bowel wall. This may be congenital or due to the age, obesity, and lowered resistance of the patient in addition to constitutional and environmental causes. The weakness may also be due to atrophy of the fat along the course of the vessels as they perforate the intestinal wall.

Second. Intracolonic pressure resulting from constipation and flatulence must play an important role.

Third. Traction on the appendices epiploicae, the mesentery or omentum, with or without adhesions to other abdominal viscera, likewise may be a contributing factor.

There are two types of acquired diverticula of the cecum, namely, primary and secondary or traumatic. The secondary or traumatic type arises as a result of some operative procedure in the lower right quadrant. These diverticula may occur at the site of amputation of the appendix. Bunts, in 1914, reported such a case due to destruction of the crucial fibers around the base of the appendix by a purse string suture. Schlesinger, in 1917, reported three cases of traumatic diverticula of the cecum due to adhesions following previous operations. He states that cecal stasis was an appreciable factor in their formation. Greensfelder and Hiller found that diverticula of the traumatic type are usually produced by eversion of the bowel between the constricting bands of adhesions, by the traction of omental adhesions, by eversion of the bowel wall through the weak spot caused by migration of the purse string suture into the lumen of the gut, or by eversion through the weakened area in the cecal wall resulting from stump abscesses rupturing into the cecum.

### *Pathology*

The pathologic changes which occur in diverticulitis are not unlike those which occur in appendicitis. Once formed the diverticulum tends to enlarge along the course of least resistance. The muscular coat if present becomes thinned out. The diverticulum then presents as a pouch of varying size with a comparatively small opening into the bowel. Fecal material will easily find its way into these pouches which do not readily empty. Thus a concretion forms which sets up ulceration followed by inflammation. The inflammation may remain chronic or become very acute with subsequent abscess formation, gangrene, and perforation. Walling off by adhesions is more active in diverticulitis than in appendicitis. There is great thickening and infiltration of the mesentery with subsequent tumor-like formation.

### *Symptomatology*

The symptoms of diverticulitis of the cecum are confusing. They may simulate



those of appendicitis, tumor, renal colic, fistula, peritonitis, pelvic inflammation, intestinal obstruction and malignancy. There is pain in the lower right quadrant. Nausea and vomiting may or may not be present. Fever occurs in varying degrees and the leukocyte count ranges from 13,000 to 30,000. Usually there is a history of several attacks. A history of alternate constipation and diarrhea is very significant. Very seldom is blood found in the stools. There is marked muscle spasm and tenderness on the right side. A tumor mass may or may not be palpable. The pain is usually considerable though not unbearable. It is more frequent in men than in women. The patients usually between 45 and 70, are, as a rule, fat individuals with poor muscle tone; often obese and beginning to lose weight.

The diagnosis is most difficult to make, even after opening the abdomen and inspecting the tumor. It must be differentiated from carcinoma, actinomycosis, amebic abscess of the cecum, syphilis, and hyperplastic tuberculosis. The diagnosis usually cannot be made until the tumor is removed. In those cases reported in the literature the preoperative diagnosis almost universally has been appendicitis or carcinoma.

### *Treatment*

The treatment of acute diverticulitis of the cecum is surgical, the operation being determined after thorough inspection of the condition present. The extent of the operation is governed by existing conditions, varying from simple drainage of a walled-off abscess, to inversion and purse string suture in cases in which there is very little inflammation, or to resection of the cecum.

### CASE REPORT

Mr. S. Y. C., aged 55, a white merchant, was admitted to St. Vincent's Hospital, February 3, 1930. For several years he had had some digestive disturbances, heartburn, flatulence, and constipation. Two days before admission he began to have pain in the abdomen which he localized in the lower right quadrant. This gradually became worse. There was no nausea or vomiting and pain was not unbearable.

On physical examination, nothing striking was found except a rather prominent abdomen with very poor muscle tone. There was marked muscle spasm and tenderness on the right side. The maximum area of tenderness was around McBurney's point. There was an indefinite mass palpable in this area, which felt like an inflamed appendix covered over by omentum.

At the time of admission the patient was found to have a temperature of 99 and a pulse rate of 86. The white count was 14,700, with 79 per cent polymorphonuclears. The red count was 4,150,000 and hemoglobin 90 per cent. Urinalysis was negative.

The diagnosis of acute appendicitis was made and patient sent to the operating room. A McBurney incision was made and a normal appendix found. On palpating the cecum a large mass about the size of a lemon was felt. It was hard, indurated and could not be inspected through the McBurney incision. A right rectus incision was therefore made. On inspection the mass seemed to involve the entire cecum beginning just above the appendix. The omentum was adherent to the mass, which was acutely inflamed and nodular. On palpation a definite crater-like area could be felt. Many large mesenteric glands were palpable. Apparently the most probable diagnosis was carcinoma, with resection the operation of choice. The inflammation extended up the ascending colon for about 8 cm. The terminal 12 cm. of the ileum and approximately 15 cm. of the ascending colon were resected and a side to side anastomosis between the ileum and the ascending colon made. One row of silk and two rows of catgut sutures were used. A cigarette drain was placed through the McBurney incision and the wounds closed in the usual manner. The patient was returned to bed in good condition. There was a slight superficial infection in the right rectus wound which developed on the 5th day. There was practically no drainage from the McBurney incision. The patient left the hospital on the 21st day well, having made an uneventful recovery.

### *Pathologic Report*

*Frozen Section Diagnosis:*—Acute diverticulitis. Specimen consists of the ileo-ce-

cal junction with about 12 cm. each of cecum and of ileum. The appendix is free of gross changes. Just above and lateral to the appendix there is a mushroom-shaped irregular tumor mass of firm consistence with a covering of mesenteric fat tissue. Its margins are slightly nodular. Section of bowel reveals a rounded opening in the cecal wall leading into a saccular outpouching which contains a large mass of semi-dried feces. Retained beyond its outer end in the lumen of the sacculation is considerable blood stained muco-pus. The lining surface is dull red, soft, with appearance of mucous membrane. The wall is thin except for the thick surface layer of firm reddened fat. The sac measures 3.5 cm. in total length and 2.5 cm. in maximum diameter. In the region of neck, just within orifice, there is a large area of necrosis of the lining wall and the covering wall is thin and softened, serosal surface deeply reddened with central vague area of yellow softening.

*Microscopical Description:*—Sections show tissues from large bowel. The mass is lined by a mucous membrane of normal structure. It is supported by a thick layer of loose fibrous tissue deep in which is an occasional bundle of smooth muscle cells but there is no definite muscular wall, the fibrous tissue going over directly into a fatty mesenteric tissue. The wall of the structure is hemorrhagic and infiltrated by great numbers of polymorphonuclear leukocytes and by serum with much fibrin. In a second block there is a poorly developed muscular layer simulating the muscular layer of bowel. The mucosa over a portion of the mass has been destroyed and the supporting tissue is deeply hemorrhagic and contains a large amount of purulent exudate. Section of the lymph nodes shows acute inflammatory infiltration.

### WHAT ANESTHETIC\*

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Mr. Percival Pott, whose name has been passed on to us in connection with Pott's fracture and Pott's disease, in his book on surgery written in 1780, mentions, as an essential prerequisite of a successful oper-

ation, a corps of able-bodied assistants to keep the patient quiet. So, until less than a hundred years ago, a surgeon depended on force for quiet and his own rapidity in operating, and perhaps a large dose of laudanum, or alcohol, to lessen the patient's agony during an operation.

After the discovery of chloroform and ether as anesthetics it became merely a question of "putting the patient to sleep" and has continued to be so until very recent times. When I was an interne in one of New York's largest hospitals the newest man on the house staff gave the anesthetic—usually gas and ether, rarely, chloroform. When I came to Montgomery one of the doctors who did practically nothing but give anesthetics had to be prodded frequently by the instrument nurse to keep him awake. But the mere fact that ether could be given in such a slipshod manner was of itself a testimonial as to its safety—chloroform had long ago frightened many men by its production of sudden and unexpected death, often given for minor procedures. I was given my experience with chloroform when serving my internship. A patient was put under light anesthesia to facilitate the passing of a cystoscope. He died suddenly. One actual experience is worth pages of another's statistics. I have never given chloroform except to women in labor who seem to have an unusual resistance to its depressing effects. And so ether remains today the general anesthetic, with, in the general run of fair risks, a negligible mortality per se. In our hospital in the past ten years there have been something over 10,000 operations—these include tonsillectomies and other nose and throat operations—in which more than two thirds received a general anesthetic, usually ether. In the whole number there were three anesthetic deaths—one with spinal, one cocaine and one with rectal ether, but none from ether inhaled.

During the past few years a number of anesthetics have been advocated and it is chiefly to discuss the place that these anesthetics hold that I am speaking today. In doing so I am taking a stand on the side of conservatism. This, I feel, is what we all should do, not only for our patients' good but for our own. We should remember that those in charge of large clinics can experiment with various procedures that we,

\*Read at the meeting of the Southeastern Division of the Association, Geneva, August 11, 1931.



as private practitioners, cannot afford to use until they have been thoroughly established. We should also remember that an anesthetic with a mortality of 1 in 3,000 sounds very safe; but when that *one* happens to be a healthy child with a broken arm, that you are setting under chloroform, or a hernia that you are doing under spinal even a mortality of 1 in 3,000 is not insignificant. Let us consider some of the commonly used and some of the less commonly used anesthetics.

Nitrous oxide, as you know, is the oldest anesthetic. It has been used, more or less, for minor procedures, such as pulling teeth, opening abscesses, setting fractures, etc., since its discovery and is still considered a safe anesthetic in such cases. Some years ago it began to be used in conjunction with oxygen for more serious cases thereby avoiding ether's irritating effect on the lungs and kidneys. Furthermore its effect was pleasant and rapid. However, nitrous oxide requires a very skilful anesthetist, with a complicated apparatus, to keep the patient well under without allowing him to get blue. In most abdominal operations the addition of ether is necessary. To see nitrous oxide and oxygen used in goitre cases in Crile's Clinic, where he has used the combination in many thousands of cases, is to excite our admiration but most of us do not operate on five or ten goitre cases a day. I would also remind you that Crile's patients are but lightly anesthetized with nitrous oxide and oxygen. The real anesthesia is produced by novocaine injected locally. If, however, only nitrous oxide and oxygen are used for goitre cases, many patients become so choked with mucous that the anesthetic has to be stopped.

Many operators use nitrous oxide in prostate operations. It certainly appears to be safer than ether, but here again it must be given by a skilful anesthetist. An old man, especially one with high blood pressure cannot stand too much asphyxia, yet the operator must have a fair amount of relaxation of both the abdominal and the perineal muscles. In other words, it is agreed that the margin of safety with nitrous oxide is very slight, death resulting from asphyxia with dilatation of the heart. This is particularly liable to occur in the aged, in those with a bad myocardium and in

children. Nitrous oxide should be so administered that the percentage of oxygen is always high enough. A capable and experienced anesthetist is therefore essential. Perhaps the greatest advantage of nitrous oxide is that it can be given in the presence of inflammatory conditions of the lungs where ether is contraindicated and where a general anesthetic is necessary.

As an apparent improvement on nitrous oxide, ethylene was introduced a few years ago. Ethylene is administered in very much the same manner as nitrous oxide. I have seen it used in some of the larger hospitals of Chicago, New York, and Boston with pleasing results. It produces more relaxation than nitrous oxide, recovery is very rapid and unpleasant after effects are very slight. Ethylene has one serious drawback—its explosive propensity. Not only is it impossible to use a cautery in the operating room but severe explosions have been produced by a spark of static electricity. It is claimed that all sparks can be eliminated if everything in the operating room is grounded. Such precaution, however, does not eliminate thunder storms. I feel that I shall leave the use of ethylene to hospitals where an explosion would not produce the commotion it would in Montgomery and where funds are more plentiful for replacing operating room equipment.

Another form of anesthesia which is being advocated quite extensively is one that must appeal to the artistic temperament of every surgeon and anesthetist; most surgeons are artists of a sort. This artistic temperament that surgeons possess has its good and its bad side. If we had to work for purely humanitarian reasons in this age when human life is so cheap, most of us would feel at times that our labors were in vain. On the other hand, a surgeon's fondness for a particular operation or procedure which appeals to his artistic pride often leads to its use when good sense and sound judgment would otherwise condemn it. That, I feel applies to spinal anesthesia. From an artistic standpoint, one is thrilled to see a patient lying on the table completely comfortable while a major operation is being performed on his stomach or pelvis. Perhaps a leg is being amputated. The picture, I say, is one that would thrill any surgeon and it is possible of production

with spinal anesthesia. But every rose has its thorn and this one a very real one in that only too frequently the patient dies even before the operation can be performed. Sudden death may be due to a rapid fall of blood pressure with cerebral anemia or to paralysis of the respiratory muscles.

I, personally, have never known of anyone to die from the bite of a snake and, until last month, I had not met anyone who had heard of such a fatality. In contrast I have known of several people to die under spinal anesthesia. In fact, men, like Babcock of Philadelphia, who use it routinely warn us that the blood pressure may at any time suffer a severe drop and prove fatal. Personally I do not care to work under any such strain. This may occur in a young, robust individual as well as in the poor risk. To give spinal anesthesia to a person who could just as well take ether, or where local anesthesia could be used, seems to me scarcely short of criminal. I have used it and perhaps will continue to use it occasionally under exceptional circumstances, but as we become more skilful with local anesthesia these instances will become fewer. Spinal anesthesia has been used as the anesthetic of choice in amputations with diabetes as a complication. E. W. Saunders of Bellevue Hospital, the last volume of *Annals of Surgery*, in discussing surgery in the diabetic, says: "It is our feeling that general anesthesia is as safe as spinal anesthesia".

During the past few years the artistic temperaments of surgeons have led them, in my opinion to employ spinal anesthesia in a most unjustifiable way. Its true evaluation seems to me to be more nearly expressed by a colored woman for whom I advised an operation for the removal of a fibroid. She said, "Doctor, is you going to put me to sleep? I don't want none of that ether what they shoots in your back and you dies."

Numerous attempts have been made to produce anesthesia through rectal introduction of ether. Such would be particularly advantageous in operations about the face and mouth and in the presence of bronchial and pulmonary infections. Due chiefly to irregularity of absorption and irritation of the bowels, however, administration of ether per rectum was not generally resorted to until Gwaltney, a few

years ago, began to use ether in combination with oil. Generally the combination is not very irritating and with properly trained nurses and suitable surroundings, has been used most satisfactorily in obstetrics. However, for safety, only sufficient dosage for a primary analgesia is used. Ether by inhalation is necessary for the actual delivery, when forceps are used or other operative procedures resorted to. There are, however, several serious drawbacks to the use of rectal anesthesia for operations. The dose is difficult to estimate and if too large a dose is given, it is often impossible to withdraw it. One of my anesthetic deaths was in an old man on whom a prostate had been performed under rectal anesthesia. It is highly probable that the ether continued to be absorbed after the operation.

The new German drug, avertine, has the same objection, plus that of being very irritating to the bowel, if not properly prepared. I cannot see where it has any place in surgery, although Dandy reports its satisfactory use in operations on the brain.

At the last meeting of the State Medical Association in Montgomery, many of you heard the rather impressive, if not startling reference, by Dr. Walter Sistrunk, to the use of sodium amytal intravenously. Sodium amytal, a barbituric acid derivative, and various other drugs belonging to the same group have been used, chiefly, however, by oral administration. There can be no doubt that these drugs are a great addition to our surgical, as well as medical, armamentarium, but I am sure there are very few who would use sodium amytal in the place of a general anesthetic as Dr. Sistrunk appears to advise. It would seem, however, that if the dose of sodium amytal can be fairly well estimated, the drug itself has very little toxicity except for a relatively moderate drop in blood pressure. Where, however, a sufficient amount is used to render the patient relaxed and free from pain, there is a slowing of the respiration and a shallowness, and the patient remains unconscious for many hours, requiring constant nursing. The shallow breathing is conducive to postoperative pulmonary complications. Here I would like to say that almost all investigators agree that postoperative pneumonia is not essentially an ether pneumonia but



that it may occur after local, or other form of anesthesia if the nature of the operation, as that on the gallbladder, or the posture of the patient, or the anesthetic is conducive to poor ventilation of the lungs. These postoperative pulmonary complications are probably far more common than we think but fortunately are not often fatal except in the aged. I have never used sodium amytal alone as an anesthetic but as a preliminary to either local, or general anesthesia it seems to me to fill a long felt want in rendering a nervous patient unafraid or even oblivious to the operation.

Take for example, a little girl, aged nine years, referred to me by Dr. Hilton Rice with a pronounced exophthalmic goitre. Her pulse rate was 120-140 and her basal metabolism, plus 50. Furthermore she was extremely nervous. At the first operation, with 6 grains of amytal and under local anesthesia the right superior thyroid was ligated. There was considerable reaction, requiring about one week to subside. After a rest of two months, during which time iodine was given, saline solution was injected one day and 6 grains of amytal the next day, the patient going to sleep immediately. Thereupon, the right lobe and isthmus were removed under local anesthesia. She remained asleep several hours and although there was considerable reaction she recovered nicely and improved gradually for the next two months. The same technique was repeated in removing most of the left lobe. There was no reaction and she has continued to improve. I do not know how a successful operative result could have been accomplished in this case without the use of some drug like sodium amytal to permit of operation without the patient's knowledge. Other than in exceptional cases like the one above it is not necessary to give it intravenously. It can be given in doses of 3 to 6 grains one or two hours before operation; then, either local or general anesthesia or both may be added and the operation consummated with but little psychic trauma. The Journal of the American Medical Association, speaking editorially, said this of non-volatile anesthetics: "Safe and efficacious new methods of anesthesia may result from the modern work in this field; but all the evidence indicates that the products thus far proposed for so-called basal anesthesia are

hypnotics or sedatives and should be used as such. They cannot be safely used for complete anesthesia and can be safely used in combination with other agents for the production of complete anesthesia only by those thoroughly experienced in the administration of anesthetics and closely familiar with the studies of the use of non-volatile agents for anesthesia. Thus far, the intravenous use must be considered unsafe."

I have always been a great believer in local anesthesia and with it have performed almost every operation that I have occasion to perform. Now with sodium amytal to do away with the mental strain, we can handle nearly every case that is unsuitable for a general inhalation anesthetic. I want you to understand though that I am advocating barbiturates as pre-anesthetic sedatives only, and not as anesthetics.

It is quite evident that no form of anesthesia is suited to all operations and all patients. In the general run of abdominal cases ether is the anesthetic of choice. Even in babies a few weeks old it can be used with safety in operations for pyloric obstruction.

In intestinal obstruction, in abdominal operations in the very old, and in cesarean section in the eclamptic, local anesthesia is very satisfactory. A general anesthetic under such circumstances would be dangerous. Rib resection for empyema, lung abscess, or subphrenic abscess also should be done under local anesthesia. For some years I have done my goitre operations under local. With the use of amytal preoperatively, I believe this to be the anesthetic of choice.

In the very old, especially in prostatic cases, it is necessary that shock to the nervous, respiratory, circulatory or renal systems be avoided. By the use of sacral anesthesia and blocking the abdominal wall with a moderate dose of amytal before operation, I feel that a prostatectomy can be done with practically no shock.

#### SUMMARY

1. Ether is the best and safest general anesthetic.
2. Spinal anesthesia has so few advantages and so many dangers that it should never be used except in unusual circumstances where a general, or local anesthetic cannot be used.

3. By the preliminary use of sodium amytal almost all operations can be done with very little psychic trauma to the patient. With the use of local or ether anesthesia, or both combined, there is a nominal risk from the anesthetic per se.

4. In general we should be slow to adopt any anesthetic, as spinal, rectal or intravenous, the whole dose of which is administered at one time and no part of which can be withdrawn. A sudden change in the patient's condition may make it necessary that the anesthetic be discontinued immediately.

## GAS BACILLUS INFECTION IN CIVIL PRACTICE\*

Report of Cases

DUNCAN P. DIXON, M. D.  
Talladega

Gas gangrene was first described by Maisonneuve in 1853 and the infectious nature of the disease was demonstrated by Batin in 1871. The infecting organism was described in 1873 by Pasteur who applied to it the term "vibrion septique". In 1891 Welch discovered and described the *Bacillus aerogenes-capsulatus* which has since been considered the chief cause of gas bacillus infection. Properly identified as *Clostridium aerogenes capsulatum*, the organism is called also *Bacillus perfringens*, *B. Welchii* and *B. aerogenes-capsulatus*.

Much light was thrown on gas bacillus infection during the World War and progress was made in treatment. Clinically the disease is divided into three types—fulminating, common, and delayed. The common type is that most often seen.

The infection usually develops in severe wounds of the extremities although it may occur in any part of the body. In the August, 1930, number of Surgical Clinics of North America, U. Maes reported a case of gas gangrene following frost-bitten feet, which terminated fatally. Delayed diagnosis, pending appearance of a line of demarcation, was responsible for the fatality. Maes said, "There are certain characteristic early signs and certain deep muscle wounds with contamination are potentially infected by this organism, and the characteristic look or smell will complete the di-

agnosis. There is no need to wait for cultures; unless diagnosis and treatment are equally prompt, the patient cannot be saved. The cultures, by the way, are characteristic. Litmus milk is used, under anaerobic conditions, and gas bubbles appear in it very promptly".

Dr. Frank Boland of Atlanta, in a recent article states, "It is difficult to enumerate the different signs and symptoms in the order in which they appear. Certainly no single symptom appears first with the regularity that pain does, as stated by John B. Murphy, as noted in acute appendicitis. However, it has been commonly observed how often the first symptom of gas gangrene is a pulse rate higher than should be expected from the patient's general condition. Instead of 80 or 90, it is 110 or 120".

The clinical picture: As soon as the infection begins, there is pain, a rapid pulse, surgical shock with high fever, perspiration and a tremendous degree of prostration. The local odor and khaki color of the skin (due to anemia) are characteristic. The infection invades the muscles that have been injured or a blood supply that has been interfered with. Thus edema is caused.

Major John Wallis of Walter Reed Hospital, in reporting a case of gas infection, states that an easy way to determine the presence of the bacillus is by inoculating litmus milk (previously heated to drive away the oxygen) with a portion of the infected material. In 6 to 12 hours the gas will form. Dr. Boland in the article, referred to above, gives the following method: "Material is obtained directly from the wound either by a sterile swab or aspirator and is placed in 10 cc. of fresh meat extract bouillon. This bouillon is faintly alkaline and contains 1 per cent dextrose. After inoculation of the culture media, a layer of sterile liquid petroleum approximately 1 centimeter in thickness is added. This oil settles over the top of the bouillon and insures practical anaerobiosis when incubated at 37.5°C. The culture is noted at 6, 8, 12, 16 and 24 hours. The appearance of gas bubbles after 6 hours indicates a specific gas former. Gas sufficient to penetrate the oil layer is almost positive indication of gas bacilli."

\*Read at the meeting of the Northwestern Division of the Association, Florence, August 13, 1931.



It has been observed that gas bacillus infection does not occur in the South during the summer, and, further, that injuries followed by gas bacillus infection always occurred through woolen clothes. In summer woolen materials are not used as clothing or for bedding. Tests with wool and woolen goods seem to be incriminating. For example, even after such articles have been washed and boiled, bacilli have been grown from spores recovered from the washings. The normal habitat of the spores is the gastro-intestinal tract. Sheep sleep in stables and in excreta. Spores adhering to the fleece are removed with difficulty. Apparently weaving and dyeing processes do not eliminate all of them. Only a long period of boiling or sterilization will suffice.

Physicians have reported a number of cases of gas gangrene following hypodermics given when patients were lying between blankets. Other cases have occurred when severe frost-bites and burnt extremities have been wrapped in blankets to keep the parts warm. It has been found that others have become infected from the wool pads interposed between the powder and shot of ordinary shells. One of the cases which I shall report later probably was infected by this means. Another case reported was that of a soldier wounded in the hip by a piece of shrapnel, which could not be located by x-ray. On postmortem it was obtained from the ventricle of the heart. Particles of wool attached caused a general gas infection.

The gross anatomy of gas bacillus infection is accurately described by Sir Cuthbert Wallace. His classification is, (1) group gangrene and (2) segmental or massive gangrene, depending upon whether one single muscle or a group of muscles are included. The disease or infection finds difficulty in passing from one muscle to another but easily extends from one end of the muscle to the other. Early diagnosis and radical treatment will save patients. Dr. Maes amputates the lower limbs since muscles do not cross the knee or thigh. In the upper extremities nothing will stop the infection since the shoulder is literally covered with muscles. He states, "I have been challenged for the statement, though I still stick to it, that I have seen many patients recover after an amputation of the lower

extremities for gas gangrene, but I have never seen one recover after an amputation of the upper extremities. The explanation is simple: profusion of muscle tissue at the shoulder joint, the lack of it at the knee. I never amputate an arm for this condition. All, from my service, recovered after wide slashing of the arm tissues, with the proper application of antiseptics, the most valuable of them being permanganate of potash, which is an oxidizing agent. I do not believe in injections of peroxide of hydrogen into the tissues; patients get well in spite of this treatment, not because of it. Any patient who survives a gas bacillus infection also survives a mild septicemia, which starts almost simultaneously with the local infection. Oxygen stays in the tissues just a few moments, spores live for years, so the futility of the treatment is apparent. The only successful treatment is by amputation ahead of the infection, or by the relief of tension in the tissues by free slashing, which, with local drainage, permits a re-establishment of the circulation".

Dr. Boland states, "The idea of operative treatment is the excision of all obviously and supposedly damaged tissue preserving as much skin and as many important nerves as possible. The adjacent tissues should be widely exposed to the air by multiple longitudinal incisions. Many different kinds of after-treatment have been proposed, but nothing in our hands has given better results than the application of the Carrel-Dakin technic. Dressings should be loose and few in order to discourage the growth of the anaerobic bacteria by the admission of oxygen.

"The involved parts and the general progress of the patient should now be watched diligently. Upon the appearance of the first signs of the extension of the disease, either local or constitutional, further debridement should be done, or better a high amputation. The aim must be to save the patient's life, and not his leg or arm. If he and the rest of us had not thought so much of how incapacitated a laryngologist would be with one arm gone, and had amputated instead of excised, we might have avoided a mortality. The routine care of the patient's septic condition is most important. Blood transfusions do not seem to produce appreciable results."

Dr. F. C. Hubbard, in a recent paper, stated, "In cases where gangrene is well established it is only a question as where to amputate. The incision should be well above the diseased area, the muscles being the guide as near as possible. Whenever possible more or less flap should be made. The point of greatest importance, however, is to act in these cases and act immediately. One hour's delay in a rapidly developing case of gas bacillus infection may spell disaster for the patient".

The use of antitoxin has been considered, one writer stating that it is supportive but not a substitute for surgical measures. At some hospitals in severe injuries gas bacillus antitoxin, as well as tetanus antitoxin, is given. It should be remembered though, that the antitoxin is expensive and difficult to procure. The cost in Washington, D. C. is \$25.00 per 20 cc. syringe.

Dr. Boland gives a series of 15 cases. Two of seven who did not receive antitoxin died; four of eight who did, died. This, he states, is too small a number to justify conclusions. Dr. Maes also is not very encouraging as to use of antitoxin.

#### REPORT OF CASES

*Case 1:* D. C. T., colored male, aged 19, was admitted to the Citizens' Hospital, Talladega, March 28, 1928 with a gunshot wound of the right forearm, which was received two days previous, while breaking in on a neighbor's wife with intent to rape. He was first seen late in the afternoon after being brought in from Lincoln, fifteen miles away. He was in a semiconscious condition, temperature 104, pulse 140, respiration 40, and seemed very much shocked. The forearm was very much swollen, edematous, and with the characteristic odor. On least pressure and manipulation gas escaped. On account of his shocked condition we only removed the dressings sufficiently to permit of opening the wound, which was syringed out with hydrogen peroxide and Dakin's solution. Several soft rubber tubes were introduced into the wound through which the gas escaped. The nurse reported hearing it escape during the night. The next morning the forearm and arm had subsided to some extent. The patient was in fair condition for an amputation with a temperature of 103, pulse of 130, and respiration of 30. Amputation of the arm in the upper third was resorted to. The wound was left wide open, no sutures being used. Hemostats were left on the large vessels and the stump was dressed loosely with gauze. The patient reacted from the operation nicely. The next day his temperature was 100, his pulse 100, and his respiration 20. On the fourth day after the operation his temperature was normal, his pulse 90 and his respiration 20. The patient was discharged from the hospital on April 11 in fair condition.

*Case 2:* Female, white, nine years of age. Was first seen early in the afternoon of June 13, 1931. She had a compound dislocation with minor fractures of the right wrist and elbow caused by a fall of about 13 feet from a tree in the yard. The projecting ends of the radius and humerus were both covered with black soil in which the forearm and arm struck. The child was taken to the hospital, the wounds cleansed and under a general anesthetic the dislocations and fractures were reduced. The elbow was placed in a right angle position with a posterior plaster of Paris splint. Tetanus antitoxin was given. The child rested fairly well during the night and seemed in fair condition the next morning. In the afternoon, 24 hours after the accident, the patient became restless and seemed very much shocked. Her temperature was 106, pulse 140 and respiration 40. The arm became very much swollen, edematous, and discolored a dark brown. The characteristic odor of gas bacillus was present and a dark brown, bloody secretion exuded from both wounds. The child was in a semicomatose condition. Under a general anesthetic a circular amputation of the arm in the middle third was performed. Large blood vessels were ligated and the wound left open, lightly packed with gauze. Recovery was rapid and uneventful.

Two other cases have been reported in Talladega both of whom have recovered.

Vitamin D is termed the antirachitic vitamin. It is the prime regulator of the calcium-phosphorus metabolism. At present it occupies the unique position in being the only one vitamin which has been synthesized or manufactured from a definite chemical compound, in the form of irradiated ergosterol. While deformities of the bony framework are the most conspicuous feature of rickets and may lead to permanently short stature, contracted thorax, and in girls contracted pelvis, it is with the phenomenon of mild rickets more insidiously menacing health with which we are more concerned. Poor muscle tonus, fretfulness, restlessness, listlessness, impaired digestion, and the like predispose to other diseases. According to Gamble, "Rachitic children are notoriously predisposed to dangerous gastro-intestinal disturbances and to the contraction of infectious diseases, especially of the respiratory tract. The lack of vitamin D has a great influence on the teeth. It causes late eruption, irregular teeth, spongy jaw bone, and a low calcium content of the teeth. It also has been proved that such defective teeth are the precursors of decayed teeth later in life.

It naturally becomes apparent, from the latest work on vitamins, that in order to improve infant nutrition we must give a liberal supply of vitamins to maintain optimum health. Only infinitesimal amounts are necessary to prevent acute deficiency diseases. In doing this, however, we must not elevate the vitamins to an exalted position at the expense of other equally important dietary factors.—O'Donnell: Penn. M. J. Dec. 1931.



# THE JOURNAL

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January 1932

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## THE SOUTHEASTERN SURGICAL CONGRESS

Birmingham, March 7-8, 1932

Alabama physicians are fortunate in having the opportunity of attending the third annual session of the Southeastern Surgical Congress in Birmingham on March 7th and 8th. It is really an intensive two-day course of instruction given by some of the most eminent surgeons of the world.

The Southeastern Surgical Congress was organized in Augusta, Georgia, in May, 1930. The second session was held in Atlanta last March and the Birmingham surgeons present were so pleased with the program, that they extended an invitation to meet in the "Magic City" in March, 1932. The program as announced will appeal to physicians interested in surgery. Indeed it would be difficult to crowd into a two-day session more practical instruction planned to meet the needs of surgeons in their every day work. General practitioners and physicians engaged in practising the various specialties will profit by attending the Congress in Birmingham because the diagnosis of surgical diseases is particularly stressed in the addresses and clinics.

Membership in the Southeastern Surgical Congress is limited to surgeons of recognized ability and consists of Senior Fellows, Junior Fellows and Honorary Fellows. The membership is limited not necessarily by number, but by qualifications, the number from each state being from fifty to one hundred.

The sponsors of this Congress are making every effort to conduct it on a high plane; it is self supporting; it sees no need for haste in selecting its members; and it will not tolerate commercialism. These are a few of the principles for which it stands.

The officers are as follows:

President—Dr. C. W. Roberts, Atlanta.

President-Elect—Dr. Frank K. Boland, Atlanta.

Vice-President—Dr. A. J. Mooney, Statesboro, Ga.

Sec'y.-Treas.—Dr. B. T. Beasley, Atlanta.

The following is a partial list of those who are to appear on the program of the Birmingham session of the Congress: Dr. W. Wayne Babcock, Philadelphia; Dr. V. P. Blair, St. Louis; Dr. A. G. Brenizer, Charlotte; Dr. W. C. Campbell, Memphis; Dr. Geo. W. Crile, Cleveland, Ohio; Dr. T. M. Davis, Greenville, S. C.; Dr. John F. Erdman, New York City; Dr. Frank Hagaman, Jackson, Miss.; Dr. Carl Hedblom, Chicago, Ill.; Dr. Chevalier Jackson, Philadelphia, Pa.; Dr. Frank Lahey, Boston, Mass.; Dr. Dean Lewis, Baltimore; Dr. C. Jeff Miller, New Orleans; Dr. Fred W. Rankin, Rochester, Minn.; and Dr. R. L. Sanders, Memphis. W. W. H.

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## THE PRACTICING PHYSICIAN'S RESPONSIBILITY TO PUBLIC HEALTH IN ALABAMA

In states other than Alabama, the practicing physician aligns himself with organized medicine largely because of ethical considerations and because of the personal advantages which accrue from such affiliation. Membership in other state medical associations or societies carries with it no clean-cut, legal responsibilities to the citizens of such states; the obligations and purposes of such societies find expression in the promotion of scientific medicine and of the general welfare of their members as related to the broad scheme of modern day social organization. This, in no sense, means that the humane, philanthropic attitude, which should characterize every earnest physician, is discouraged; but it does mean that no definite, legal obligation attaches to such membership. History abundantly points out that a fixed responsibility serves as a potent lever in produc-

tivity; and human nature is such that, in the absence of such responsibility, output lags; consequently there is a direct ratio existing between productivity and responsibility.

In Alabama's scheme of organization, the legislature has definitely placed upon the organized profession the direction and control of all public health affairs within the State. The County Medical Societies, speaking through their respective Boards of Censors, become the County Boards of Health and the State Medical Association, voicing itself through the State Board of Censors and its State Health Officer becomes the State Board of Health. It is because of this responsibility and the courageous manner in which organized medicine has met these obligations, that much of our success in this field of endeavor is due. Sane leadership we unquestionably have had; but leadership alone, without the mighty and articulate backing of a unified, interested medical profession, would never have produced such happy results. The public health worker cannot advance far beyond the vision or scope of the crystallized medical thought existing in any community without immediately encountering difficulty. One of the marvels revealed to visitors from other states and other countries when coming to Alabama, is the splendid type of co-operation given to health workers by the entire profession; and yet to the doctors of this State this does not seem strange, because of the fact that they recognize and assume their own responsibility in this important regard. The new and younger acquisitions to our profession should quickly acquaint themselves with the details which make them a vital part of the health machinery of this State. Regular attendance upon the meetings of the County Medical Society; a familiarity with the various activities conducted by the health workers within a county and a careful study of the constitution of the Association and the health laws of the State offer ready means for giving this necessary information.

With this information once acquired, and the proper vision caught, the practicing physician in Alabama becomes not alone a healer of the sick; he becomes much more; he becomes a promoter of health and a preventer of disease.

#### SECTIONAL MEETING OF THE AMERICAN COLLEGE OF SURGEONS

A general invitation is extended to all members of the medical profession of the State to attend the Alabama, Florida, Georgia, Louisiana and Mississippi Sectional Meeting of the American College of Surgeons, to be held in Jacksonville at the Mayflower Hotel on February 1st and 2nd, 1932.

The committee on local arrangements in Jacksonville, with the cooperation of the College headquarters, is making every possible effort to assure a highly instructive and interesting meeting.

A number of distinguished surgeons, health leaders, and hospital authorities, from outside the state, included in the section will be brought by the College to Jacksonville on this occasion to participate in the program.

On Monday evening it is to be especially noted that there is a dinner to which all members of the medical profession are cordially invited. Following this dinner there will be a most interesting exhibition of sound pictures bearing on medical subjects. Full details of the program will appear later.

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### *Medicolegal*

#### INSANITY AS A DEFENSE

The medicolegal aspects of the case briefly cited below and the analysis and decision as rendered by the Supreme Court of Alabama should prove of interest to Journal readers, inasmuch as the insanity plea is coming to occupy an increasingly more prominent place in many criminal cases. —*Editor.*

The ruling case in Alabama on insanity as a defense in a criminal trial is *Parsons v. State*, reported in 81 Ala. 577, and 2 Sou. 854.

The indictment in this case charged that the defendants, Nancy J. Parsons and Joe Parsons, unlawfully and with malice aforethought killed Bennett Parsons by shooting him with a gun.

The defense was based upon a plea of insanity.

The evidence on behalf of the defendants tended to show that Nancy Parsons, the wife of the deceased, was insane at the time of the homicide, and that Joe Parsons,



the daughter of Nancy and Bennett Parsons, was, at the time of the homicide and previously, an idiot.

The trial judge, in instructing the jury, followed the rules of law announced in the famous *McNaghten's Case*, decided in 1843 before the English House of Lords, 10 Cl. & F 200, which had been previously adhered to by the Supreme Court of Alabama. These rules are clearly stated in the following charges by the trial judge to the jury:

"When insanity is relied on as a defense to crime, and such insanity consists of a delusion merely, and the defendant is not shown to be otherwise insane, then such delusion is no justification or excuse of homicide unless the perpetrator was insanely deluded into the belief of the existence of a fact or state of facts which, if true, would justify or excuse the homicide under the law applicable to sane persons."

\* \* \*

"It is only insanity of a chronic or permanent nature which, on being proved, is presumed to continue; there is no presumption that fitful and exceptional attacks of insanity are continuous."

\* \* \*

"If the jury believe from all the testimony that the defendants at the time of the killing were in such a state of mind as to know that the act they were committing was unlawful and morally wrong, they are responsible as a sane person, if the jury believe they committed the act with which they are charged."

The defendants were found guilty by the jury of murder in the second degree and an appeal to the Supreme Court of Alabama was taken.

The Supreme Court made this case the subject of a reconsideration of the law relating to insanity as a defense in the prosecution for crime in Alabama. The decision of the Court was rendered during the December term, 1886, but the principles of law therein enumerated have been followed in this State ever since.

The development of the law on this subject was carefully traced by the Supreme Court from the early English decisions on down to modern times. It was frankly recognized by the Court that the deliverance of the law courts on this branch of jurisprudence had not theretofore been satisfactory, either in the soundness of their theories or in their practical application. It was felt that the Courts had fallen into error by attempting to declare things to be the law which were in reality matters of fact.

The test which had been previously applied in cases of this kind had been denominated "The Right and Wrong Test", that is, the ability of the accused to judge between right and wrong, either in the abstract or as related to the particular circumstances surrounding the act of the accused.

Medical science had demonstrated, however, since this test was first developed, that an insane person might know, as an intellectual proposition, the difference between right and wrong in the abstract, or even with relation to the particular circumstances surrounding the crime, and still be so dominated by the power of a mental disease as to be unable to choose the right course or to refrain from following the wrong one.

The Supreme Court, as a result of its re-examination of the law on this subject, outlined the inquiries to be submitted to the jury in every criminal trial where the defense of insanity is interposed as follows:

"1. Was the defendant at the time of the commission of the alleged crime, as matter of fact, afflicted with a *disease of the mind*, so as to be either idiotic, or otherwise insane?

"2. If such be the case, did he know right from wrong as applied to the particular act in question? If he did not have such knowledge, he is not legally responsible.

"3. If he did have such knowledge, he may nevertheless not be legally responsible if the two following conditions concur:

"(1) If, by reason of the duress of such mental disease, he had so far lost the *power to choose* between the right and wrong, and to avoid doing the act in question, as that his free agency was at the time destroyed.

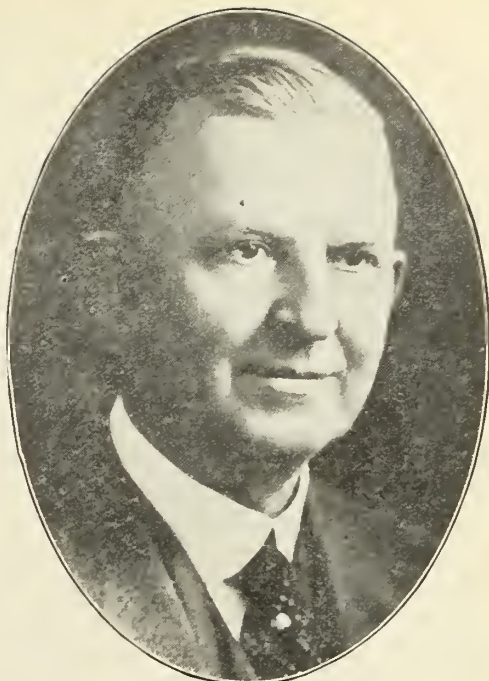
"(2) And if, at the same time, the alleged crime was so connected with such mental disease, in the relation of cause and effect, as to have been the product of it *solely*."

It was further held by the Court in this case that when insanity is set up as the defense in a criminal case it must be established to the satisfaction of the jury by a preponderance of the evidence; and that when there is a reasonable doubt of the defendant's sanity, raised by all the evidence, it does not authorize an acquittal.

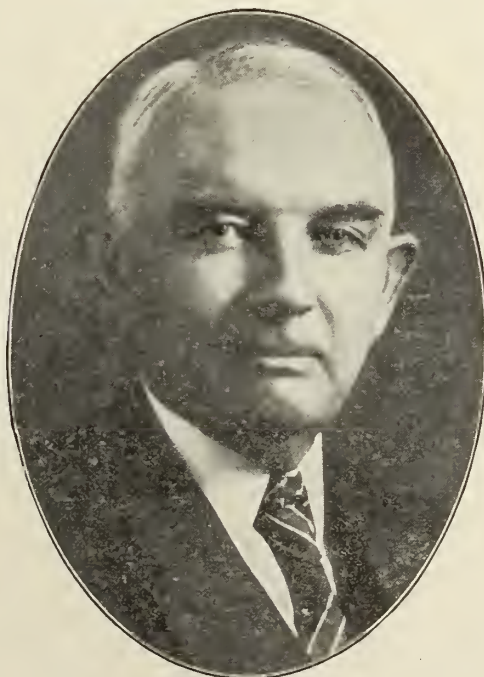
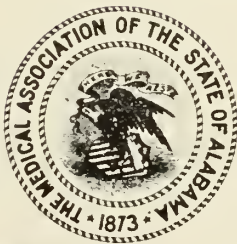
The opinion of the Court in this case carefully avoids any commitment to the proposition that emotional insanity or other mental disorder that is not the result of a *diseased mind* is a legal defense in a criminal action.



GLENN ANDREWS, Montgomery  
1902-1903



W. W. HARPER, Selma  
1923-1924



W. G. HARRISON, Birmingham  
1930-1931

PAST PRESIDENTS OF THE ASSOCIATION



## DEPARTMENT OF PUBLIC HEALTH

## BUREAU OF ADMINISTRATION

J. N. Baker, M. D.  
State Health Officer in Charge

## ANTI-DIPHTHERIC VACCINATION

*Report of the Committee of Hygiene of the  
League of Nations*

The commission of experts to study the problems related to vaccination against diphtheria, which met in London in June of this year, has just submitted its report which is quite interesting and which is given below.

The State Health Officer desires to commend this report to the profession and to suggest to its members an adoption into their daily routine of the cardinal points made therein. Particular attention is directed to articles 7 and 8, and more especially 10. Extensive clinical practice in this country has demonstrated that it is both proper and safe to immunize the infant *during the first year of life*. It cannot be too often repeated that most of the tragedies from this disease are enacted in the *preschool* age, the period of child life over which the practicing physician should exercise careful supervision. The report follows:

1. Vaccination against diphtheria provokes an important diminution in the mortality and morbidity among the vaccinated. The value of this statement is indicated by the rigorous comparisons which have been made since the last inquiry. The diminution in mortality and morbidity is considerable among the vaccinated children, particularly when the conditions of administration are satisfactory and when efficient vaccines are used.

2. The reactions which have sometimes been obtained after injections of the vaccine are not formidable and they should never prevent the propaganda in favor of vaccination among the children, inclusive of the tuberculous, and should not prevent the choice of the most potent vaccines.

3. In a general manner and from a strictly clinical point of view it is proven that the efficacy of the vaccination may best rely on the Schick reaction, despite the existence of certain exceptional instances.

4. In basing the conclusions on the morbidity data and on the percentage of positive Schick reactions which become negative after the immunizations and on a certain number of antitoxin titrations which were made with the blood of the vaccinated, one may conclude that the anatoxin is the

most efficacious of all the antigens which have been the object of a comparative study. Toxin-antitoxin mixtures and toxoid may for the present be recommended.

5. The clinical studies submitted to a study by the conference have shown that the immunizing property of toxoid in man may in conjunction with the antigenic potency be evaluated by means of the flocculation test. In this manner one may find a common understanding for the standardization and for the control of the different types of prophylactic vaccines against diphtheria.

6. The method of administration which is *recommended is subcutaneous*. The nasal route may be used in case the subcutaneous can not be employed. The cutaneous method has not given, according to our experience, favorable results.

7. *Vaccination must consist of three injections*. One may hope that in the future the use of a more active antigen may permit the procedure of vaccination to be reduced to two and possibly one injection.

8. *The time intervals recommended are three weeks between the first and second injections and at least two weeks between the second and third*.

9. It has not been found necessary to practice the Schick reaction before the vaccination. Occasionally, it may perhaps be of interest to perform the Schick test before and after the vaccination in a certain number of patients in order to control the value of the method of the vaccination which has been employed.

10. Vaccination against diphtheria is recommended for the pre-school period to begin at the end of the first year of life.

11. In case the children have not been vaccinated in the pre-school period, they should be vaccinated during the first year when they enter school. It is furthermore recommended at the various charitable institutions and administrations which assemble large groups of children, such as summer colonies, sanatoriums, preventorium, etc., that they demand at once from the personnel and the children a certificate of vaccination against diphtheria or a certificate which declares that the Schick reactions of the child are negative.

12. Vaccination is also recommended for the various hospital wards, the asylums, the dispensaries, sanatoria, schools, etc., and in particular, for the personnel of hospitals.

13. Vaccination is also recommended during periods of epidemic distribution of disease and also for children who have been in contact with diphtheria patients. There is no documentary evidence at present available which would indicate that there is an existence of a negative phase.

14. Vaccination against diphtheria should be the object of active propaganda on the part of public health administrations of the different countries in order to enlighten the public on the advantages of this public health protective measure.

## BUREAU OF LABORATORIES

L. C. Havens, M. D., Director

## LABORATORY AIDS IN THE DIAGNOSIS OF TUBERCULOSIS

The microscopic examination of stained specimens of sputum for tubercle bacilli is one of the oldest of diagnostic laboratory procedures. Yet its limitations are still too frequently ignored, and its proper interpretation often disregarded. In the presence of clean cut symptoms, the finding of tubercle bacilli is unequivocal confirmation but where the symptoms are vague and the signs in the chest are not definite, it must always be remembered that laboratory reports must be interpreted as an integral part of the sum total of the evidence from all sources. Some of the chief considerations in the interpretation of a sputum examination, either positive or negative, are as follows:—

(1) *The laboratory report is based on morphology.* Acid-fast bacteria, other than the tubercle bacillus, are rare in sputum but they occasionally occur there; a positive report, therefore, in the absence of any clinical evidence of infection, should be accepted with this qualification.

(2) *A negative report does not exclude tuberculosis.* It merely indicates that tubercle bacilli were not found in the particular specimen examined. In suspicious cases, eight or more carefully collected specimens of the early morning sputum\* should be examined. Instances have occurred where a series of a dozen or more consecutively negative specimens have been followed by a positive.

(3) *The presence of tubercle bacilli means an "open" case.* The disease may have been progressive for some time before a tubercle ruptures into an air passage and permits the escape of the bacilli in the sputum. A positive sputum, therefore, frequently means far advanced tuberculosis. It is important, however, to know at the earliest possible time, whether the patient is infectious.

*Animal Inoculation.*—It is not an infrequent occurrence that material in which no tubercle bacilli can be found on micro-

scopic search, will cause tuberculosis after injection into a guinea pig. This is notoriously true of such exudates as pleural fluid. The disadvantages of animal inoculation as a routine procedure are the expense and the time required (three to six weeks), to obtain a result.

*Culture.*—The objection to cultural methods for diagnostic purposes has been the delay due to the slow growth of the organism. Recently Herrold<sup>1</sup> has developed a medium in which the tubercle bacillus grows much more rapidly, within 7-10 days, instead of several weeks, as in the usual media. Our experience with this medium has been limited but the results are encouraging and indicate that it has a useful place in the diagnostic laboratory. Herrold claims that specimens in which no bacilli can be found by the most thorough microscopic search will yield a positive result when cultivated on his medium.

We have, therefore, several reliable means for proving the presence or absence of tubercle bacilli in obscure cases: (1) repeated microscopic examination of carefully selected specimens of sputum, to determine whether a case is "open" and, therefore, infectious; (2) guinea pig inoculation with pleural fluid and other exudates; (3) culture, to detect with reasonable speed, the presence of original small numbers of tubercle bacilli in the material examined.

It is true that a diagnosis in most cases of pulmonary tuberculosis can, and should, be made before bacilli appear in the sputum. The sputum should always be examined, in any event, to determine if, or when, the patient is infectious. The number of specimens received by the State Laboratories indicates that too little attention is paid to this phase of the problem. In 1930 we examined 8,531 specimens of sputum for the whole State. If the accepted figure of some 22,000 cases is correct, this means less than one specimen for every two patients, a ridiculously small number. The number of positive specimens (1537 or 18%) further indicates that, if the final diagnosis is not made until tubercle bacilli are shown to be present, many patients are incurable before their condition is fully realized. Not only has the chance of

\*A useful practice is to instruct the patient to collect the early morning specimen on three successive mornings in one bottle. This is then repeated on successive weeks, if necessary.

(1) J. Infect. Dis., 48: 236; 1931, 49: 420, 1931.



cure or arrest been lost, but no measures have been taken to prevent infection of the patient's family and other close associates.

Effective control of tuberculosis means early diagnosis of the active case, with consequent reduction in the number of persons exposed to infection. Sputum examinations, repeated as often as necessary or advisable, play a considerable part. The number of specimens examined may be taken as an index of the effectiveness of any control measures undertaken.

### BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

#### DIPHTHERIA IN ALABAMA

Alabama in 1931 experienced an unusually high incidence of diphtheria, the number of cases being exceeded only once in the past eight years and that in 1927. This marked prevalence was not confined alone to this State but was general throughout the Southern States. Like all communicable diseases, diphtheria has waves of high and low incidence but the epidemic of this last year emphasizes anew certain facts regarding its occurrence.

1. It is a disease of late summer and fall. Cases begin to increase in August and reach their peak about the end of October, decreasing gradually through the winter.
2. It is primarily a disease of infants and preschool children. Seventy per cent of the cases occur in the preschool group and eighty per cent of the deaths are in this same age group. An appreciable number are in babies under one year of age.
3. In Alabama, white children have more cases proportionately than do negro children.
4. Cases do not occur among children who have been immunized.

With these facts in mind, the solution to the control of diphtheria is obvious. Immunize every baby at six months of age and diphtheria would soon be a medical curiosity. Either toxin-antitoxin or toxoid is recommended, but toxoid is rapidly replacing the older preparation. Immunity requires some time to develop so it is advisable to do the most immunizing some months prior to the diphtheria season. The City of Detroit Health Department re-

cently treated a group of susceptible children between the ages of one and five with toxoid and then Schick tested them again at monthly intervals. The results were:

	Month After Toxoid Child Given Schick Test					
	1	2	3	4	5	6
Number children tested ...	202	45	12	6	5	5
Number Schick negative	157	33	6	1	0	2
Accumulated negatives.....	157	190	196	197	197	199
Per cent negative .....	77.7	94	97	97.5	97.5	98.5

From this it is evident that immunity develops quite rapidly with toxoid but that the maximum effect is not reached for at least six months and that a small number need further treatment. The State Board of Health is prepared to furnish toxoid to all physicians on request and is urging its use.

### BUREAU OF VITAL STATISTICS

W. T. Fales, Director

Ethel Hawley, Acting Director

#### COMPARATIVE STATISTICS ON CANCER

A comparison of the death rates from cancer in Alabama with those in the U. S. Registration Area as a whole has many factors of interest.

In 1900 cancer ranked sixth as a cause of death in the Registration Area. In the next thirty years it has risen to second place, being exceeded only by heart disease in 1929.

Figures for 1900 are not available in Alabama, but since 1917 cancer has risen from tenth to seventh place. Although in 1929 the death rate in Alabama from all forms of cancer was 51.2 per 100,000 population and that of the Registration Area was 95.9, or 87 per cent more than the Alabama rate, the indications are that at present cancer is increasing more rapidly in Alabama than in the Registration Area as a whole, as will be seen from the accompanying table.

For all forms of cancer the rate in the Registration Area has increased 15 per cent since 1920, while in Alabama it has increased 64 per cent. The greatest increase was among white females, being 84 per cent white males 70 per cent, colored males 64 per cent, and colored females 42 per cent. A part but not all of this difference in the rate of increase is due to increased accuracy of reporting in Alabama.

In 1920 death reporting in Alabama was probably about 80 per cent complete. If we assume that the true death rate in Alabama was the same as the Registration Area, the rate of increase of cancer for 1929 over the estimated rate for 1920 would still be 29 per cent.

CANCER DEATH RATES AND PER CENT OF CHANGE 1920-1929

	TOTAL					
	U. S. Registration Area			Alabama		
	1920	1929	% Change	1920	1929	% Change
All Forms	83.4	95.9	+ 15.0	31.2	51.2	+ 64.1
Buccal Cavity	2.9	3.0	+ 3.4	1.0	1.6	+ 60.0
Stomach and Liver	31.4	32.6	+ 3.8	7.9	13.9	+ 75.9
Intestines	11.2	14.6	+ 30.4	2.2	5.4	+145.4
Female Genital Organs	12.3	13.7	+ 11.3	9.2	12.1	+ 31.5
Breast	7.6	8.8	+ 15.8	2.5	5.1	+104.0
Skin	2.7	2.5	- 7.4	1.7	2.7	+ 58.8
Other and Unspecified	15.0	20.7	+ 38.0	6.8	10.3	+ 34.0

	WHITE					
	Male			Female		
	1920	1929	% Change	1920	1929	% Change
All Forms	26.7	45.3	+ 69.7	35.8	65.7	+ 83.5
Buccal Cavity	2.2	2.5	+ 13.6	0.6	1.4	+116.6
Stomach and Liver	9.2	18.1	+ 96.7	7.6	14.1	+ 85.5
Intestines	2.5	5.6	+124.0	2.2	6.2	+181.8
Female Genital Organs				12.6	19.8	+ 57.1
Breast				3.9	11.2	+187.2
Skin	3.0	4.5	+ 50.0	1.8	3.2	+ 77.8
Other and Unspecified	9.7	14.3	+ 47.4	7.1	9.9	+ 39.4

	BLACK					
	Male			Female		
	1920	1929	% Change	1920	1929	% Change
All Forms	14.8	24.2	+ 63.5	43.6	62.1	+ 42.4
Buccal Cavity	0.9	0.7	- 22.2		1.2	
Stomach and Liver	7.4	10.1	+ 36.5	7.1	9.5	+ 33.8
Intestines	2.1	3.7	+ 76.1	1.7	5.4	+217.6
Female Genital Organs				23.2	31.7	+ 36.6
Breast				5.6	8.3	+ 48.2
Skin	0.7	0.4	- 42.9	0.6	0.8	+ 33.3
Other and Unspecified	3.6	9.0	+150.0	5.4	5.2	- 3.7

Although the Alabama rate for cancer of the intestines and peritoneum is still only 27 per cent of that in the Registration Area, the rate of increase for that cause has been much greater, both in Alabama and the Registration Area than for any other, being greatest for colored females and least for colored males.

The cause showing the next highest rate of increase, both in Alabama and the Reg-

istration Area, was cancer of the breast. This type of cancer showed a much higher rate of increase for white females in Alabama than any other type.

As a whole, the white race for cancer is much higher than the colored, 26 per cent in 1929. This difference is most marked between white and colored males. The rate for white males being 45.3 and for colored 24.2, or 87 per cent more for white than colored. The white female rate is only 6 per cent more than the colored. This is accounted for mostly by the very high colored death rate for cancer of the female genital organs. This is the only type of cancer that shows a higher rate for colored than for white, but the difference is very marked being 19.8 for white and 31.7 for colored or 60 per cent greater for colored than white.

The stomach and liver are the organs most frequently attacked by cancer, this type being responsible for 27 per cent of the total cancer deaths in Alabama and 34 per cent in the Registration Area. The female genital organs rank next in Alabama with 24 per cent of the total cancer deaths, while in the Registration Area only 14 per cent of cancer deaths are due to this type. In the Registration Area the organs second in importance as a seat of cancer are the peritoneum and intestines, with 15 per cent of total, while in Alabama, only 11 per cent of the total is of this type.

The Southern States have the lowest death rate from cancer of any section of the country and the New England States the highest. The Bureau of Vital Statistics hopes to be able to make additional studies which will throw some light on the cause of this difference, particularly as to whether there is a real difference or whether it is an apparent difference due to a difference in the composition of the population in the two sections. There is a significant difference in the composition of the population in Alabama and the combined population of Maine, New Hampshire, Vermont and Massachusetts. In these states 35 per cent of the population is between the ages of 35 and 64, when cancer incidence is highest and only 25 per cent of the population of Alabama comes within this age group. 99 per cent of the population of these states is white, against 64 per cent in Alabama, while Alabama is



only 28 per cent urban and these other states are 77 per cent. Since in Alabama the urban rate is 146 per cent more than the rural and the white rate 26 per cent more than the colored, this difference in composition of the population of the two districts will account for at least a part of the difference in rate, but further studies will be necessary to determine exactly the percentage of the difference which is due to this cause.

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## BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

### A COUNTY NURSE WITH TWO HOURS TO SPARE

An Alabama county had been asking the question, Can we keep up our County Health Department? Is it a prime essential? Somebody must give attention to the prevention of epidemic diseases, of course, but must it take the full time of three or four people?

The agitation had had its effect on the courage and energy of the health workers but they set their jaws behind a smile and went on.

The nurse started out with instructions to meet the patrons of the brick school who were scheduled to bring their children, school and preschool, for toxoid inoculations. Diphtheria had made its dread appearance and must be stopped. The people demanded it.

"If there is time", said the Health Officer, "after the clinic, you may make some of your infant welfare or prenatal visits in that community."

There were 69 children to be given a third dose of toxoid. They were not afraid this time and it went off smoothly. Two hours were left for home visiting.

The nurse called first upon twin girls of six weeks whose grandmother was caring for the babies because the life of the mother went out at their birth. The father was unemployed and humiliated by the necessity of accepting Red Cross aid. He needed to be inspired with a new viewpoint.

"This is your opportunity to help Grandmother care for your small daughters. She has indomitable courage but lacks the conviction that I am sure you have that mod-

ern ideas about infant feeding are best. Study this booklet in your spare time and back up Grandmother's courage with your clearer understanding of how to do and why."

The sun was less than an hour high. There was scarcely time for another visit but she decided to call on Mrs. Dell because this mother was so cheerful and gay frolicking with her four babies all under six, that it would leave a good feeling for the end of the day. Her knock at the door of the Dell cottage brought no answer. She found Mrs. Dell on the back steps in tears.

"No, Mr. Dell hasn't been laid off. I expect everything is all right if I could see it that way but he says there is talk of a wage cut or even a part-time work schedule and we must not have any Christmas. We can't afford it the way things are. This will be the first year I ever let His birthday pass without something for the children."

"But I'm sure Mr. Dell really meant you must not spend money unnecessarily for Christmas. The real spirit of Christmas fortunately is not dependent upon things that cost money. You must have food and warm things to wear, you can plan a real celebration with the provisions for Christmas dinner, done up in gay packages. I have some of the wrappings I collected from last year. I'll get them from my car."

When she saw the carefully smoothed out holly paper and red twine Mrs. Dell's face let the sun shine through. When the county nurse headed her car down the hill Mrs. Dell stood on the front steps all smiles waving her adieux. The nurse looked at a slippery dirt road with a setting sun shining upon it. "I wonder," she thought, "if the powers that be would say that that last two hours work of mine was worth while." "Is it more important," she ruminated, "to increase the quantity of life or to improve the quality of it?"

Then she looked clear-eyed into the glare of the setting sun and stepped on the gas.

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## BUREAU OF INSPECTION

C. A. Abele, Director

### THE RESULTS OF MILK QUALITY CONTROL IN ALABAMA

In a recent news release the U. S. Public Health Service stated that its milk quality and safety control program has been in existence for a period of eight years, and

that nearly 450 American communities have adopted this plan. The ultimate object of this program is a practically nation-wide adoption and application of one unified milk quality control program, one advantage of which would be the raising of the average level of milk safety, thereby preventing most of the 40 to 50 epidemics of milk-borne disease now occurring in this country every year.

The Public Health Service milk control program had its inception in this State, when the late Dr. S. W. Welch, late in 1922, requested the Surgeon-General to detail to Alabama an officer of the Service to formulate a milk control program which might be recommended to county health officers for the control of their community milk supplies. It is of interest, in connection with the statement in the above referred to news release, to note the effect of the milk control program applied in this State during the past eight years.

In order that the conditions surrounding the production of milk in 1931 may be compared with those existing in previous years accurate records of dairy inspection findings must be available. Since the inauguration of the milk quality control program in 1923 all inspection findings, bacteria counts, and sample temperature readings on every dairy supplying each community in which the milk ordinance had been adopted, or in which its adoption was contemplated, have been recorded and filed. If, then, a composite picture of all the dairy farm conditions, as they existed just prior to the adoption of the milk ordinance, is prepared from the recorded inspection findings we have a basis with which to compare conditions reported at subsequent periods.

The Public Health Service has evolved a method by which the sanitary condition of a municipal milk supply, raw or pasteurized, at any given time, may be expressed in the form of a numerical "rating", such as 48.7, or 80.3, etc. A raw milk rating of 100.0 indicates that every gallon of the supply is produced in accordance with all the specifications for the production of Grade A Raw Milk, that all bacteria counts during the period covered by the rating were under 50,000 per cc., and that all sample temperature readings were 50°F. or less.

The grades of milk supplies have now been determined and announced one or more times in 45 communities in this State, ranging in size from less than 1,000 to 70,000 inhabitants. The quantity of milk included in this program is approximately 23,000 gallons per day. In the following table the aggregate raw milk and pasteurizing plant ratings of these 45 community milk supplies, prior to the enforcement of control measures and in the third quarter of 1931, are given.

#### Enhancement in Safety of Forty-five Alabama Municipal Milk Supplies

Raw Milk			% Increase (over pre-enforcement)
Period	Rating		
Pre-enforcement	47.8		
3d Quarter 1931	93.2		94.9%
Pasteurized Milk			Percentage of Supplies Pasteurized
Period	Rating	% Increase (over pre-enforcement)	
Pre-enforcement	29.9		13.5%
3d Quarter 1931	96.4	222.4%	25.6%

Taking into consideration the increased rigidity of inspection standards developed during the past three years, as compared with standards observed when the first pre-enforcement ratings were determined in 1923, 1924, and 1925, the data presented in this table may be summarized in the statement that the safety of the aggregate raw milk supplies of 45 Alabama communities has been enhanced approximately 95 per cent; and that the safety of pasteurized milk has been enhanced approximately 220 per cent.

It is quite obvious that the percentage of enhancement in safety effected in these milk supplies is entirely dependent upon the level of the ratings fixed by the pre-enforcement surveys. Had the milk supplies been somewhat better when the control work was begun, the improvement could not have been so striking. At the same time, the fact should not be lost sight of that the raw milk supplies now rate over 90 (a quite good grade in any test), and that the pasteurized supplies now rate over 95.

The best proof of the pudding, however, is the fact that not a single outbreak of disease (if four cases of suspected undulant fever may be excepted) has been traced to any of these 45 municipal milk supplies since control activities were inaugurated.



## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

THE RELATION OF MALARIA TO THE LIFE  
AND HABITS OF ANOPHELES  
MOSQUITOES

Contributed by

C. C. Kiker

Assistant Sanitary Engineer

In 1880 Laveran discovered the causative agent of malaria to be due to a parasite in the blood. It was not until fifteen years later, however, that Ross observed this parasite in the body of the mosquito. With the latter discovery, investigational work was given considerable impetus. The three types of malaria parasites were definitely established. The cycle of their development in the blood of man and in the body of the mosquito was carefully worked out. Experiments revealed that only the anopheles mosquito could be infected and of this species only a very few sub-members were actually responsible for malaria transmission in nature. Many latter day discoveries in connection with the control of this particular type of mosquito have been made. A wealth of scientific and practical knowledge has been accumulated. One may now go through the literature and glean facts of value in undertaking malaria control in most any country of the world. Practices suitable in the United States, however, may not be best in Central America or India or Italy. This is due to a difference in the life and habits of the mosquito responsible for malaria transmission in the various countries.

Familiarity with the life and habits of the particular mosquito responsible for malaria transmission is most important if control work is to be directed wisely and economically. It has been said that "to become a good malariologist one has to learn to think like a mosquito". Intimate contact with the mosquito in nature is, therefore, essential.

While there are three common anopheles mosquitoes in Alabama (*A. quadrimaculatus*, *A. punctipennis*, *A. crucians*) potentially capable of transmitting malaria, only one, the *A. quadrimaculatus*, is actually of importance. When it is stated that this significant fact is due to a difference in the habits of the mosquitoes, as each of the above three have characteristic breeding places though they may at times overlap,

one readily sees the importance of full acquaintance with them.

The *A. quadrimaculatus* produces in permanent ponded water though newly impounded ponds where no clearing has been done is a suitable breeding place. It requires from seven to fourteen days, depending on temperature and food, for the mosquito to develop from the egg to the winged insect. The food available in the larvae state may have a bearing on the size and hardness of the adult mosquito. The larvae, lying parallel and at the water's surface, feed almost continuously by ingesting the algae and plankton found in natural bodies of fresh water. Air is necessary to life of the larvae, though it may be submerged for long periods with no ill effects. Many air ducts within the body bring the necessary oxygen where it may be absorbed. The larvae may be distinguished from other species of anopheles by the location and number of characteristic hairs on the body. This identification was worked out no earlier than 1924. Previously it was necessary to collect the larvae and permit them to hatch out. This was a long and uncertain procedure. Now one may go into the field and in a few hours' time establish the type anopheles production taking place in several breeding areas. Mosquito production in Alabama begins in quantity about June 1st and continues throughout the summer and fall until frost.

After emergence the adult *A. quadrimaculatus* will range upwards of a mile from the breeding place in search of blood. Only the female sucks blood. The male feeds on vegetation juices and does not range as far as the female. This mosquito readily enters houses, barns or chicken houses. It may be found resting in the dark corners of such places during the day time. The mosquito feeds only at night and seems not to have any preference between the blood of man and that of animals.

Where malaria is being transmitted in Alabama, the *A. quadrimaculatus* will invariably be found in numbers during the summer. Field workers use the adult mosquito count as a check or confirmation on reported cases of malaria.

The question is often asked, "How long will this mosquito live?" This is not known exactly though it is felt that the average life does not exceed three or four weeks. This

opinion is based on a number of instances where mosquito production was observed to be taking place in sufficient quantity to give counts of 60 to 100 adults in nearby residences. After elimination of the breeding area through partial or complete drainage, these counts have been observed to drop rapidly until within three or four weeks it would be exceedingly difficult to find even a few mosquitoes in the vicinity.

The *A. quadrimaculatus* adult is easily identified with the naked eye by characteristic spots on the wings. It has an unscaled wing except for four spots or scale patches in the center. The name "quadrimaculatus" was taken in part from the Latin word "quad", meaning four, which refers to the number of spots on the wing.

The mosquito passes the winter in Alabama in all stages of development from the egg to the winged insect. Cold weather halts its development in the aquatic stage. The eggs and larvae remain dormant. The adults hibernate during the winter.

These few details as well as many others not given have a bearing on malaria transmission as well as the control measures used. It might be said that the more knowledge we acquire as to the life and habits of the mosquito the better fitted we will be to cope with it in malaria prevention.

## CURRENT STATISTICS

State Department of Health

### \*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1931 Nov.	1931 Oct.	Total Cases to Date This Year Last Year	
Typhoid	89	128	919	824
Malaria	175	495	2394	4645
Smallpox	2	9	293	180
Measles	26	31	9230	3803
Scarlet Fever	247	304	1606	1385
Whooping Cough	61	58	806	1691
Diphtheria	597	557	1932	1363
Tuberculosis	295	441	4762	3686
Pellagra	20	36	1166	600
Meningitis	11	7	220	126
Tetanus	6	7	49	44
Influenza	101	20	5901	3012
Dengue	0	0	2	13
Polioomyelitis	4	1	46	66
Pneumonia	175	47	3119	2549
Chickenpox	67	57	1653	1921
Mumps	22	63	1149	598
Encephalitis	1	1	43	28
Ophthalmia Neonatorum	2	0	13	19
Typhus	13	15	69	64
Trachoma	0	0	1	16
Undulant Fever	1	3	16	18
Tularemia	0	0	5	7
Rabies	0	0	2	4
Syphilis (private cases)	84	192	1532	1672
Chancroid (private cases)	3	13	77	87
Gonorrhea (private cases)	117	178	1530	1738

\*As reported by physicians and including deaths not reported as cases.

## PROVISIONAL MORTALITY STATISTICS

October 1931

	Number of Deaths Registered Oct., 1931			Annual Rate per 100,000 Population		
	White	Black	Total	Oct. 1931	Oct. 1930	Oct. 1929
ALL CAUSES	1126	1032	2158	944.6	996.9	1075.5
Typhoid fever	15	10	25	10.9	11.6	6.7
Small pox						
Measles	1		1	0.4	0.9	0.4
Scarlet fever	3		3	1.3	1.3	0.4
Whooping cough	3	3	6	2.6	4.4	4.5
Diphtheria	29	8	37	16.2	15.5	22.8
Influenza	2	8	10	4.4	11.9	9.8
Pneumonia, all forms	52	46	98	42.9	48.2	55.5
Polioomyelitis	3	2	5	2.2	0.4	0.4
Tetanus		1	1	0.4	0.9	2.2
Tuberculosis, all forms	71	115	186	81.4	72.1	74.7
Tuberculosis, pulmonary	61	104	165	72.2	62.4	66.7
Malaria	18	16	34	14.9	23.9	38.0
Cancer, all forms	90	28	118	51.6	45.6	55.9
Diabetes mellitus	20	5	25	10.9	10.2	8.5
Pellagra	12	16	28	12.3	19.5	18.8
Cerebral hemorrhage, apoplexy	78	60	138	60.4	62.4	60.0
Diseases of heart	110	111	221	96.7	121.7	133.8
Diarrhea and enteritis						
Under 2 years	31	14	45	19.7	36.7	21.5
2 years and over	11	3	14	6.1	8.8	6.7
Nephritis	101	83	184	80.5	81.0	97.1
Puerperal state, total	18	19	37	16.2	19.9	17.9
Puerperal septicemia	6	6	12	5.2	5.7	7.2
Congenital malformation	14	2	16	7.0	7.1	6.7
Congenital debility and other diseases of early infancy	71	37	108	47.3	51.3	67.6
Senility	15	21	36	15.8	13.3	16.1
Suicides	11	1	12	5.2	8.0	4.0
Homicides	18	49	67	29.3	18.6	15.7
Accidental burns	4	6	10	4.4	4.4	5.3
Accidental drownings	4	4	8	3.5	1.3	3.1
Accidental traumatism by firearms	5	3	8	3.5	1.8	4.9
Mine accidents	1	2	3	1.3	3.5	4.9
Railroad accidents	3	2	5	2.2	3.5	5.8
Automobile accidents	27	12	39	17.1	25.6	21.0
Other external causes	27	15	42	18.4	16.8	29.1
Other specified causes	187	160	347	151.9	144.7	158.9
Ill-defined and unknown causes	71	170	241	105.5	98.7	96.2

## County Society News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

### BULLOCK COUNTY

J. K. Haygood, Secretary

At the regular meeting of the Bullock County Medical Society held on December 9, the following were elected officers for 1932: President, G. M. Guthrie, Inverness; Vice-President, J. W. Thomason, Midway; Secretary-Treasurer, J. K. Haygood, Union Springs. Dr. Guthrie was re-elected a member of the Board of Censors.

During the course of the scientific program, Dr. C. M. Franklin read a paper on Pseudo-Intestinal Obstruction.



The following resolution was unanimously adopted by the society:

*Resolved*, That the County Health Officer be permitted to give typhoid inoculations, administer diphtheria toxoid, vaccinate against smallpox and provide hookworm treatments but no other therapeutic or preventive agents.

#### CALHOUN COUNTY

C. Hal Cleveland, Secretary

The society has elected the following officers for 1932: President, John D. Durden, Anniston; Vice-President, B. F. Caffey, Choccolocco; Secretary, C. Hal Cleveland, Anniston; Treasurer, E. C. Anderson, Anniston. Dr. James Williams, Jacksonville was chosen a member of the County Board of Censors.

Dr. G. A. Cryer has been elected health officer for a further term of three years.

#### COLBERT COUNTY

John P. Long, Secretary

At the December meeting of the Colbert County Medical Society, the following named officers were elected for the year 1932: President, W. A. Finley, Cherokee; Vice-President, H. A. Griffith, Sheffield; Secretary-Treasurer, J. P. Long, Sheffield; Censor, G. F. Littlepage, Sheffield.

#### CULLMAN COUNTY

R. B. Dodson, Secretary

The following officers have been chosen to serve the society during 1932: President, R. A. Culpepper, Cullman; Vice-President, J. W. Wood, Hanceville; Secretary-Treasurer, M. S. Whiteside, Cullman. Dr. J. G. Daves was elected a member of the Board of Censors.

Dr. Gottlob Hartung, for many years a member of the society and its president, died December 18, aged 88 years.

#### ETOWAH COUNTY

DeWitt Faucett, Secretary

The society has elected the following officers for 1932: President, C. L. Murphree, Gadsden; Vice-President, J. M. McElroy, Attalla; Secretary-Treasurer, DeWitt Faucett, Gadsden. Dr. J. M. Brown, Gadsden, was chosen to serve on the Board of Censors.

Dr. T. Y. Greet, Gadsden, died December 14 of angina pectoris.

#### FAYETTE COUNTY

B. W. McNease, Secretary

At a recent meeting of the Fayette County Medical Society, Dr. Stuart Graves, Dean of the University School of Medicine, presented a paper on "The Progress of Medical Education in the United States and Its Relation to Alabama"; and Dr. A. D. Keller, also of the School of Medicine, read a paper on "Recent Researches in the Physiology of the Central Nervous System".

#### GENEVA COUNTY

M. E. Doughty, Secretary

At a meeting of the Geneva County Medical Society on December 8, Dr. J. P. Chapman of Birmingham discussed the importance of early diagnosis of diabetes; and Dr. E. Lawrence Scott, Birmingham, presented a paper on "Infantile Paralysis".

Dr. Ernest Tankersley, Samson, has been elected President of the society, Dr. C. P. Gay, Geneva, Vice-President, and Dr. M. E. Doughty, Secretary-Treasurer. Dr. G. W. Williamson, Hartford, has been re-elected a member of the Board of Censors.

#### HOUSTON COUNTY

F. G. Granger, Secretary

The Houston County Medical Society at its meeting on December 4 elected the following officers: President, J. T. Ellis, Dothan; Vice-President, C. W. Hilliard, Dothan; Secretary-Treasurer, F. G. Granger, Dothan. Dr. D. M. Hicks was re-elected to the Board of Censors.

#### JACKSON COUNTY

M. H. Lynch, Secretary

Dr. Hugh Boyd, Scottsboro, Dr. J. A. Gentry, Stevenson, and Dr. M. H. Lynch, Scottsboro, have been elected President, Vice-President and Secretary-Treasurer, respectively, of the society. Dr. Rayford Hodges has been elected to membership on the Board of Censors.

At the meeting of the society on December 15, Dr. Hodges read a paper on Rocky Mountain Spotted Fever, with report of case. Dr. W. H. Robertson, Princeton, reported three cases of pernicious anemia, occurring in his practice.

#### LAMAR COUNTY

J. A. Jackson, Secretary

At a meeting of the Lamar County Medical Society held recently, Dr. G. S. Barks-

dale of Fernbank was elected President, Dr. R. H. Redden, Sulligent, Vice-President; and Dr. J. A. Jackson, Vernon, Secretary-Treasurer.

Dr. M. R. Seay, Fernbank, died in a Columbus, Mississippi, hospital on December 10.

#### LAUDERDALE COUNTY

W. D. Hubbard, Secretary

Dr. A. A. Jackson, Florence, has been elected President of the society for 1932; Dr. W. R. Moore, Florence, Vice-President, and Dr. W. D. Hubbard, Secretary-Treasurer. Dr. W. J. Callaway was elected a member of the Board of Censors and Dr. Hubbard, County Health Officer.

#### LAWRENCE COUNTY

R. E. Harper, Secretary

Dr. J. F. Huey, Hillsboro, has been re-elected President; Dr. H. C. McCullough, Town Creek, Vice-President; and Dr. R. E. Harper, Secretary-Treasurer of the society for 1932.

#### MADISON COUNTY

W. G. McCown, Secretary

The Madison County Medical Society met in Huntsville at the Russell Erskine Hotel on the evening of December 8 at 7:30 o'clock for the regular monthly meeting and dinner. The program of the evening was an address by Dr. S. B. McPheeters of the State Board of Health. His subject was, "Some Aspects of the Diagnosis of Tuberculosis in Adults and Children".

Dr. McPheeters conducted a chest clinic at the Huntsville hospital December 8th, 9th, and 10th, and at the Merrimack hospital December 11th. Sixty adult patients and twenty-five children were examined. Dr. McPheeters will return to Huntsville in sixty days to hold another clinic.

#### MOBILE COUNTY

W. W. Scales, Secretary

Dr. J. G. Sanders, Mobile, presented a paper on "Vertigo" to a recent meeting of the society, the paper being based on the author's observations.

Dr. C. V. Partridge, Mobile, has been elected a member of the society.

Officers chosen to serve during 1932 are J. H. Dodson, Mobile, President; J. Mac

Bell, Mobile, Vice-President; W. W. Scales, Secretary, and J. H. Little, Treasurer. Dr. Toulmin Gaines was elected Librarian and Dr. Dodson, a member of the Board of Censors.

#### MONROE COUNTY

T. E. Tucker, Secretary

The following have been chosen officers of the society for 1932: President Emeritus, F. S. Dailey, Tunnel Springs; President, S. B. McMillan, Frisco City; Vice-President, A. B. Coxwell, Monroeville; Secretary-Treasurer, T. E. Tucker, Monroeville. Dr. C. H. McMillan, Beatrice, has been elected a member of the Board of Censors, Dr. R. A. Smith, Monroeville, Jail Physician, and Dr. Tucker, County Health Officer, for a term of three years.

#### PICKENS COUNTY

V. L. Ashcraft, Secretary

The following officers have been elected to serve the society during 1932: Dr. G. E. Spruill, Ethelsville, President; Dr. J. L. Conyers, Carrollton, Vice-President; Dr. V. L. Ashcraft, Reform, Secretary-Treasurer. Dr. Spruill was also elected a member of the Board of Censors.

#### TUSCALOOSA COUNTY

Ralph McBurney, Secretary

At the recent annual business meeting of the Tuscaloosa County Medical Society, the following officers were elected for the ensuing year: President, Dr. J. Henry Somerville; Vice-President, Dr. R. C. Partlow; Secretary-Treasurer, Dr. Ralph McBurney.

To the Board of Censors, which also acts as the County Board of Health, Dr. Fred Crenshaw was elected to fill the unexpired term of Dr. Hobson Davis because of the latter's absence from the State, and Dr. Webster Ward was elected for the full term of five years to succeed Dr. Somerville. Dr. Ward, who is former president of the society, has served on the County Board of Censors almost without interruption for twenty years.

Dr. McBurney, who recently returned to the School of Medicine as Professor of Bacteriology and Hygiene after two years of absence in the Rush Medical College and the Harvard School of Public Health, was



ected to full membership. Dr. George Searcy brought to the attention of the society the original charter granted to the Tuscaloosa County Medical Society at Birmingham on April 19, 1912, signed by Lewis C. Morris, M. D., President, and J. N. Baker, M. D., Secretary. The Tuscaloosa County Society was originally chartered in 1877. The original members listed on the charter of 1912 are as follows: Sam Bealle, B. A. Burks, Jos. H. Cooper, W. V. Dougherty, Edward C. Hagler, R. H. Howell, Sydney Leach, Jno. Little, Geo. M. Milner, Wm. D. Partlow, Jas. Thos. Searcy, Wm. B. Shamburger, W. T. Taylor, Webster Ward, Chas. P. Bell, B. L. Carpenter, N. T. Davis, W. M. Faulk, E. N. Harris, A. D. Killian, T. M. Leatherwood, L. Foster Mayfield, Robt. Neilson, Madison K. Patton, Geo. H. Searcy, J. E. Shirley, Jas. Trimm, J. M. Wheat, A. H. Bobo, B. F. Caffey, Jos. F. Davis, Alston Fitts, F. Hausman, Jno. A. Sanford, Jos. Leland, Geo. A. Merriam, Andrew B. Nichols, Geo. R. Rau, H. B. Searcy, L. P. Taylor, Jno. Hester Ward and Jas. L. Williamson. The society voted unanimously to make the library of the School of Medicine the permanent depository for the charter and the society's records.

The following members of the medical faculty of the University were elected to associate membership: Franklin S. DuBois, M. D., Thomas E. Hunt, Ph. D., James O. Foley, Ph. D., Allen D. Keller, Ph. D., Allan W. Blair, M. D., C. M., Gene H. Kistler, M. D., Marie C. D'Amour, Ph. D.

Professor McBurney showed a three-reel film on "The Relation of Nutrition to Dental Health on Wednesday, December 10, at 7:30 P. M. at a joint meeting of the Tuscaloosa County Medical Society and the Tuscaloosa County Dental Society, given in the auditorium of the Josiah Clark Nott Hall of Medicine on the University campus. Dr. W. W. Wilson, Head of the Dental Department of the T. C. I. Hospital, preceded the film with a talk on "Recent Researches in Dentistry".

WALKER COUNTY  
J. C. Gladney, Secretary

Dr. W. M. Cunningham has recently announced his removal from Corona to Jasper with offices at the Walker County Hospital.

## Book Abstracts and Reviews

**Emergency Surgery.** By John William Sluss, A.M., M.D., F.A.C.S., Associate Professor of Surgery, Indiana University School of Medicine; Zone Surgeon, United States Fidelity and Guaranty Company; Consulting Surgeon City Hospital; Staff Surgeon Methodist and St. Vincent's Hospitals, Indianapolis, Ind.; and John Walker Martin, Vice-President and Surgical Director, United States Fidelity and Guaranty Company, Baltimore, Md. Assisted by David Hart Sluss, M.D., F.A.C.S., and Camilius Bowen De Motte, B.S., M.D. P. Blakiston's Son and Company, Inc., publishers, Philadelphia, 1931. Fifth edition. Price, \$5. 879 pages with 797 illustrations. Limp binding.

The fact that this book has gone through five editions is conclusive proof that it fills a demand on the part of the medical profession. It is a handbook of emergency surgery, prepared for the general practitioner whose work at times forces him to act in the capacity of surgeon under circumstances which are far from ideal. The wording of the book is concise and dogmatic, and free from theoretical discussions on controversial points.

Over half of the book deals with the treatment of injuries. The section on fractures is particularly good though at times the descriptions are too sketchy to be perfectly clear. The illustrations are well chosen and illustrate better than words the various methods of treating fractures. Chipman's method of reducing a dislocated shoulder is described and illustrated in detail. The chapter on treatment of abscesses in various parts of the body is also unusually well written.

In bringing the edition up to date new chapters have been added on the following subjects: Postoperative Nursing Care, Postoperative Treatment, Perforated Gastric Ulcer, The Technique of Posterior Gastro-Enterostomy, The Emergency Gallbladder, Cholecystectomy, Acute Pancreatitis, Fracture Apparatus, and Operative Treatment of Fractures.

It is unfortunate that the proof reader neglected to detect certain errors in the manuscript, for there are many misspelled words, typographical errors and incorrect references to pages and illustrations.

C. K. W.

**Gonorrhea in the Male and Female.** By Percy S. Pelouze, M.D., Associate in Urology and Assistant Genito-Urinary Surgeon of the University of Pennsylvania; Fellow of the Philadelphia College of Surgeons. Second Edition, Revised. 440 pages with 92 illustrations. W. B. Saunders Company, publishers. Philadelphia and London. 1931. Cloth. Price, \$5.50 net.

In 1929, Saunders published a book by Pelouze entitled "Gonococcal Urethritis in the Male". In it the author described the best available methods of treating gonorrheal urethritis, giving the reasons for the methods outlined, presenting his facts in an interesting form rather than in encyclopedic manner. The book was well received. It was reprinted four times. In our own city, a few copies were passed around from one doctor to another, argued over, and fingered until soiled. A new revised edition is now offered to the profession. The complications of gonorrhea in the male are given more detailed description and a section has been added on "Gonorrhea in the Female".

Part I deals with the pathology, symptomatology and treatment of gonorrhea and its complications in the male. Pelouze makes a plea for

gentleness in treatment. He decries the use of sounds and the urethroscope in early gonorrhea. He explodes the idea of using drugs for chemical destruction of the gonococcus but explains the reasons for the use of mild solutions of permanganate and silver salts which act not as antiseptics, but as stimulants to proper tissue response. He stresses the great harm done by large doses of vaccine and emphasizes the fact that coitus and alcohol must be interdicted. His chapter on the criteria of cure is timely.

Part II presents a series of 48 cases showing errors in treatment and outlining the methods of caring for the overtreated or mistreated case.

Part III deals with the disease in women. The author admits a lack of experience in dealing with diseases in women and makes no attempt to give an exhaustive description of the treatment in the female. He does, however, extend his observations on the disease in the male to that in the female and presents certain principles of rest, the use of mild antiseptics, and the prevention rather than the treatment of complications. The application of these principles by the general practitioner or the gynecologist seems logical and may make gonorrhea in women as simple and mild as is the properly treated case in the male.

Altogether it is a good book, well written, and well printed.

C. K. W.

**Nutrition and Diet in Health and Disease.** By James S. McLester, M.D., Professor of Medicine at the University of Alabama, Birmingham. Second edition. Octavo of 891 pages. Philadelphia. W. B. Saunders Company. 1931. Price, \$8.50.

A new edition of the most valuable book on the subject published. Four printings of the previous edition within three years guarantees its merit. This second edition, revised, enlarged and well indexed, contains an even greater wealth of information concerning all the major problems of diet and nutrition with which the profession at large is confronted. The author, no less well known for his profound knowledge of basic sciences than as an able clinician, has well accomplished his endeavor to present a work "from the point of view of the physician whose interests are general—to base dietary rules on nutritional requirements, and to arrange the details according to the knowledge obtained from experience". Those who have been accustomed to struggle with numerous works in order to learn how to prescribe an indicated dietary regime cannot but welcome this excellent book to which they can turn in full confidence to obtain the most recent and authoritative consideration of the subject.

In striking difference to similar works is the clearly written and interpreted discussion of the disturbed physiology preceding the dietary management in each instance. The recent epochal advances in biochemistry and physiology as applied to clinical medicine are incorporated. The more noteworthy changes and additions in the book appear in the chapters dealing with metabolic disorders (gout, diabetes mellitus, obesity), epilepsy and diseases of the blood. The all important new dietary management of idiopathic epilepsy is discussed fully. The chapter on Diseases of the

Blood Forming Organs has been entirely rewritten, conforming to the recent valuable contributions of Castle, Sturgis, Minot, Murphy, Whipple *et al.* This chapter alone makes the book worthwhile. As in the former edition there are numerous suggested menus throughout and where feasible the author has shown that for a diet to be successful it must be adapted to the patient as well as to the disease.

The reviewer heartily recommends this volume to all students and physicians; to the former it will serve as an excellent textbook, to the latter as a reference work of great value.

J. H. W.

## Truth About Medicines

**Liver Extract in Pernicious Anemia.**—The treatment of pernicious anemia is not merely with liver or a potent substitute, but with enough liver or potent substitute for the given individual case. A falling red blood cell count is a clear-cut indication for the administration of much more potent material. Progressive cord changes are also a clear-cut indication for the administration of much more potent material, no matter whether the red blood cells are present in normal or in decreased numbers. If the patient has difficulty in absorbing the material when given orally, the parenteral administration may be of great advantage. The following liver extracts have been accepted for New and Non-official Remedies: Liver Extract No. 343 (Lilly), Concentrated Liver Extract-Armour, Liver Extract-Fairchild, Liver Extract-Lederle, Marine Liver Extract-White, Solution Liver Extract Parenteral-Lederle. (Jour. A. M. A., December 19, 1931, p. 1912)

**Malignant Conditions in Radioactive Persons.**—In 1925, Martland reported cases of anemia and of necrosis of the jaw in persons who had been employed in painting watch dials with paint made luminous by the addition of radium, mesothorium and radiothorium. During several years previous to 1924, 800 girls did such work in a New Jersey factory. The girls swallowed small amounts of radioactive paint day after day as a result of pointing the brushes with the lips. Some who had worked for one or more years developed necrosis of the jaw and anemia, from which, up to 1928, thirteen died. Now, however, another pathologic condition



seems to have arisen among the employees who swallowed radioactive paint. Since 1928, rapidly growing osteogenic sarcomas have appeared in at least eight cases. In consideration of recent developments the high incidence of primary carcinoma of the lungs in the cobalt miners of Schneeberg and in the pitchblende mines of Joachimstahl, and the various lesions produced by external exposure to radium and x-rays, demand investigation, and many of the radioactive substances sold to the public for the cure of various ailments may be dangerous to health. Testifying against the interstate sale of vials of mesothorium and radium which were to be injected after being dissolved in water, Martland reported that he had examined two patients who had taken such water from one to two years and found both to show radioactivity, and both had extensive necrosis of the upper jaw. Martland states that waters which contain only emanation are frauds and he doubts whether they are harmless. The drinking over long periods of time of radioactive waters containing radon, and the drinking of natural radioactive waters, should be discouraged. Martland likewise cautions against the intravenous injection of long lived radioactive elements. (Jour. A. M. A., December 26, 1931, p. 1968)

**The Problem of Vitamin Assay.**—It has become obviously important to secure estimates of the varying content of vitamins in the numerous foods that carry these indispensable nutritional substances. The need of suitable methods of assay has been accentuated along with the growing efforts to separate the different vitamins from their natural carriers and to prepare concentrates of them. Since the value of cod liver oil resides largely in the content of vitamins A and D, the Council on Pharmacy and Chemistry of the American Medical Association requires that the specific vitamin potency of brands of cod liver oil and cod liver oil concentrates accepted for New and Non-official Remedies, be declared. Unfortunately assay procedures for these vitamins present great difficulties so long as the chemical identity of a vitamin remains undetermined. So far assay methods have been based on physiologic methods, as is illustrated by the determination of vitamin A potency which was adopted for the tenth revision of the

U. S. Pharmacopeia. The establishment of units for such methods has been confronted with great difficulties. The Permanent Standards Commission of the Health Organization of the League of Nations has been concerned with the problem of vitamin standards and units and an unanimous agreement has been reached to define vitamin units in terms of standard substances rather than terms of a biologic test. This means that the methods of assay were not considered in detail; instead the test substance and the standard preparation will be investigated simultaneously by the same method, and the test substance should therefore show the same value in terms of the standard, whatever biologic technic is employed. (Jour. A. M. A., December 5, 1931, p. 1712)

**The Menace of Methyl Alcohol.**—The dangers from the use of methyl alcohol have increased because the prohibition of alcoholic beverages has led to the substitution, in ignorance or unwittingly, of methyl alcohol. The danger has been increased by its use in automobiles as an anti-freezing agent in radiators of motor cars. In addition to the deliberate or the unsuspecting imbibition of the harmful methyl alcohol there are the dangers not only if inhalation of its vapors but also of its possible absorption through the skin. From studies on animals, it has been estimated that approximately 1 ounce of methyl alcohol repeatedly in contact with the human body, under conditions favorable to retention and evaporation, constitutes a threat to well being. It has also been estimated on the basis of experiments on monkeys, that the vapors of one ounce of methyl alcohol entering the human body constitute a threat to life even when the exposure is distributed over two or three days. (Jour. A. M. A., December 5, 1931, p. 1710)

**Theelin and Amniotin.**—The new preparations of ovarian hormone, such as Theelin and Amniotin, have been used in a large number of cases of troublesome menopausal symptoms, but the results obtained are by no means uniform. In many cases, no relief at all is obtained whereas in others, the benefit derived is excellent. In some cases in which good results are observed, part of the success may be attributed to the psychologic effect of the injections. (Jour. A. M. A., December 12, 1931, p. 1822)

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## INTRAVENOUS PYELOGRAPHY\*

### ADVANTAGES AND LIMITATIONS

WALTER F. SCOTT, M. D., AND JARRATT  
P. ROBERTSON, M. D.  
Birmingham

Intravenous pyelography is a comparatively recent addition to the procedures used in the study and diagnosis of urological conditions. Its introduction was received with great enthusiasm by many members of the medical profession and had just the opposite effect on others, as is usually the case in all advancement in medical science. The first group felt that the Utopia of urology had been reached, that in the future pathologic conditions of the urinary tract could be diagnosed easily by this method and no longer would one expert in cystoscopy be needed to determine them. The second group was not so optimistic; they felt that it would be used by all doctors who had access to an x-ray and as a result many incorrect diagnoses would be made, and many pathologic conditions overlooked. At times patients with a normal urinary tract would be subjected to major operations, if intravenous pyelography should take the place of cystoscopy and retrograde pyelography. There was a third group, however, that, with study, saw it in its true light, an intravenous pyelogram and not a cystoscopic examination with pyelography. They felt that it would be of great value in certain pathologic conditions, but would have a limited application; that it would never take the place of the cystoscope, because it does not give a view of the bladder or furnish specimens of urine from the kidneys for examination and comparison of function; and that the

pyelograms would not be as clear as those obtained by retrograde pyelography. It has been proved that the solution is eliminated in the urine in a concentration of about five per cent only and such a concentration will not give as strong a contrast shadow as the solution used in making pyelograms. Time has proved the last group to be correct.

The first compound, uroselectan (iopex), used for intravenous pyelography was produced by Professor Benz<sup>1</sup> and its practical application worked out in Professor Von Lichtenberg's Clinic and reported by Dr. Swick. Later there was placed upon the market a second product for intravenous pyelography known as skiodan. From our experience with it the pictures seem to be about the same as those obtained with uroselectan (iopex) but it has the advantage of being excreted faster, there is less pain and reaction at the time of the injection, it does not produce as much gas in the intestinal tract and the solution does not deteriorate as rapidly.

From the infancy of pyelography it has been the desire of many to make pyelograms without the use of the cystoscope. In 1905 Von Lichtenberg<sup>2</sup> and Volcher attempted intravenous pyelography but found the colloidal metals they used too toxic. Using sodium iodide, Roundtree<sup>3</sup> and his associates published the first positive results in 1923. Roseno<sup>4</sup> was the first to obtain clinical success. He used an urea-iodin combination but it was not tolerated well by all patients. Uroselectan (iopex), the compound produced by Professor Benz, when tried by Professor Von Lichtenberg and Dr. Swick, was found to be non-toxic, non-irritating to the veins and to be secreted in concentration enough to cast a shadow on an x-ray film.

\*Read at a meeting of the Talladega County Medical Society, Talladega, October 7, 1931.



It was soon proved that intravenous pyelography was not of value in all conditions and that the findings were not so easily interpreted as some had thought. At present it has been in use long enough to prove that it cannot take the place of the cystoscope but has a definite use and is of great value where indicated.

Uroselectan (iopex) or skiodan when used in a fifteen to twenty per cent concentration are ideal media to use in retrograde pyelography as there is a marked reduction in the pain and reaction following their use and an increase in the density of the shadow when compared to twelve and one half per cent sodium iodide.

In intravenous pyelography great care must be taken to see that the intestinal tract is free of gas before making the plates as the shadow is not as clear as those obtained by retrograde pyelography. Both drugs seem to have a tendency to produce gas in the intestinal tract but we feel that this is more marked where uroselectan (iopex) is used. If this is not kept in mind often important details of the picture will be obscured by gas. The bladder should be emptied between the second and third plates to prevent the cystogram from obscuring the lower ends of the ureters. Compression of the abdomen by means of a large rubber bag for a few minutes before making the x-ray will increase the density of the shadow.

The adult dose of uroselectan (iopex) is prepared by dissolving forty grams of the powder in one hundred cc. of double distilled water. The solution is then filtered and sterilized in an autoclave or by boiling in a water bath for twenty minutes. Skiodan comes in fifty cc. ampules ready to inject or may be prepared by dissolving twenty grams of the powder in fifty cc. of water following the same technique as for uroselectan (iopex). The solutions are best given in the median cephalic vein at the elbow; either the gravity method or the syringe may be employed. Skiodan requires two or three minutes for the injection, but ten to twenty minutes must be allowed for the injection of uroselectan (iopex) if it is to be free from pain and reaction to the patient.

We have not seen a single severe reaction following their use in patients rang-

ing from childhood to old age, and it was used in a number of patients where cystoscopy was contraindicated for various reasons. One patient had a chill but we feel that this was due to an error in our technique and not the solution. A few have vomited while the injection was being given but this was in instances where the solution was given too fast. About one-half of those receiving uroselectan (iopex) have complained of pain and burning of a moderate degree that radiated from the site of the injection to the chest. The majority complained of a fullness and burning of the face and that the body was warm. At times the face became very red and the eyes watery. These symptoms are increased if the solution is given too fast and will subside if the rate is decreased. Usually they will disappear before the injection is finished. Skiodan has the advantage of not producing these reactions to as marked a degree.

Uroselectan (iopex) according to Von Lichtenberg<sup>5</sup> contains forty-two per cent of organically bound iodine. The manufacturers of skiodan state that it is an organic compound containing fifty two per cent of iodine. The work of Swick and Heckenbeck<sup>6</sup> revealed the fact that ninety per cent of uroselectan (iopex) was eliminated through the kidneys if they were normal and the greater part in the first two hours. If the kidneys were impaired often only fifty to seventy per cent could be recovered from the urine. The remainder, they thought, was probably eliminated through the liver and intestinal tract.

It has been found that uroselectan (iopex) and skiodan are secreted from the normal kidney in a concentration of about five or six per cent. Such a concentration does not give as dense a shadow as twelve and one-half per cent sodium iodide used in retrograde pyelography. At the best we cannot expect the pictures to equal the pyelograms made in the usual way. If the kidney excretion power is reduced the clearness of the pyelograms will be reduced in the same proportion and if the kidney damage is great enough no shadow will be obtained. In ureteral obstruction the shadow is increased due to the retained urine in the kidney pelvis and ureter, if the function of the kidney has not been

too greatly impaired. For this reason if used as a functional test it might lead one to think the poor kidney was the better of the two. Minor disturbances of kidney function cannot be determined with it but often in unilateral conditions it is possible to locate the diseased side and in bilateral conditions the more involved side. The fact that a shadow is only shown on one side does not mean that the other kidney is dead but that it is not functioning at that time and a later examination may show a good kidney. This was well illustrated in a case we saw where a stone had blocked the ureter for several weeks. A good outline of the pelvis and ureter was shown on the opposite side, but no shadow on the side with the stone. The stone was pushed into the kidney pelvis and six days after the intravenous pyelogram and four days after the obstruction was relieved, cystoscopy showed a fair dye test from the involved side. The urea output was one-half that of the other side and the flow of urine was good. The pyelogram showed the kidney pelvis to be dilated to twice the normal size from back pressure and it was thought that if the stone was removed the kidney function would again reach normal. (The patient refused operation.)

Tourne and Damm<sup>7</sup> found that the principal points of elimination of uroselectan (iopex) were the kidneys and liver and the principal point of storage the skin. From this work it can be seen that in case of severe damage to the kidneys or liver unpleasant reactions might follow its use.

Professor Peterfi and Drs. Hughes and Schaffhauser<sup>8</sup> report that the greater part of uroselectan (iopex) is eliminated through the glomerulus of the kidney. According to Von Litchenberg<sup>9</sup> in glomerular damage poor or no pictures were obtained, especially in pyogenic parenchymatous infections and in many cases of tuberculosis and tumors. Conditions causing retention, which result primarily in tubular damage, give, even in advanced state, good pictures.

Von Litchenberg<sup>10</sup> states that the clotting and sedimentation time of the blood is not affected and there is only slight danger of thrombosis. He reports only eight mild cases in seven hundred injections. These occurred from six to eight days af-

ter the injection and were probably due to local trauma and not the solution. We have not seen a single case develop a thrombosis in about seventy five injections and in one instance the solution (uroselectan or iopex) was infiltrated around the vein.

The normal position of the kidneys and ureters are shown by intravenous pyelography and the spasm and dislocation produced by the catheter are not present. For this reason it is of great value in studying ptosis of the kidneys, and kinks and strictures of the ureters. It should help greatly to clear up that often debated question as to whether there is a stricture of the ureter present and if so whether it is the cause of the patient's complaint.

Some authorities feel that it is indicated in those cases that refuse cystoscopy because of pain but we recommend that these patients be given a caudal or low spinal anesthetic and cystoscoped as the intravenous pyelogram may not give all the information that is desired.

It is indicated where it is impossible, due to some form of urethral obstruction, to pass a cystoscope and in those cases where the ureteral orifice cannot be located as in the case of severe cystitis, tumors and hemorrhage; also where the ureter is obstructed by a stone and in cases of stricture or kink of the ureter where a catheter cannot be passed high enough to make a pyelogram. It is especially indicated in abnormal locations of the ureteral openings and ureters transplanted into the bowel; also where a horseshoe kidney, double ureters or other congenital deformity of the kidney or ureter is suspected but has not been proved, and in cases where retrograde pyelography is contraindicated. It may be indicated in small children but with the infant cystoscopes now on the market, a child of any age in most instances can be easily cystoscoped, and more information obtained than is possible with intravenous pyelography. As far as we know it has never been tried, but we feel that it might be of use in diagnosing rupture of the bladder; if the patient is not in shock. Some feel that intravenous pyelography should be used in patients with hypertrophy of the prostate where kidney infection is suspected, as often these patients are poor risks for cystoscopy with ureteral



catherization and at times the ureteral orifices are hard to locate because of the enlarged prostate. The cases of this kind on which we have tried it in most instances have had kidney damage to such a marked degree that the dye was not secreted in concentration enough to give satisfactory plates. Often it may be used to advantage to check retrograde pyelograms. We feel that it should not be used exclusively where retrograde pyelography is not contraindicated and can be done. Swick<sup>11</sup> states that it should not be used on patients with uremia or latent uremia.

### CONCLUSIONS

1. Intravenous pyelography is only an addition to our present means of examining the urinary tract and does not take the place of the cystoscope.

2. It has a limited application but is of great value where indicated, but when used where not indicated disappointment will often result.

3. It is non-toxic, safe to use, and easy to give.

4. It should not be used exclusively where retrograde pyelography is not contraindicated and can be done.

5. An understanding of urology and the history of the case is often needed to interpret the plates.

6. It is indicated in those cases where it is impossible to pass a cystoscope, where the ureteral orifice cannot be located or a catheter passed high enough to make a pyelogram, in abnormal locations of the ureteral orifices and congenital deformity of the urinary tract. It may be of value in those cases that refuse cystoscopy and as a means of diagnosing rupture of the bladder. Often it will give valuable information when compared with pyelograms made in the routine way.

7. It is contraindicated in uremia and latent uremia. Poor pictures may be expected in patients with marked bilateral kidney damage.

We feel this paper might well be closed with the words of our (J. P. R.) teacher, Dr. Edward L. Keyes<sup>12</sup>: "To all authors and inventors whose theories have been inadvertently stolen or whose practice has been clumsily described apology is offered. Let those who have not been named set

this oversight down to ignorance. Let those who have been misquoted believe that this was done without malice. Let the real inventors, whose material has been accredited to some scribe, concede at least that the scribe doubtless needs the advertisement more than they."

Empire Building.

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## HYPOGLYCEMIA AS A CAUSE OF CONVULSIONS IN CHILDREN\*

### REPORT OF CASES

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The term "convulsion" is employed in a broad sense to designate any tonic or clonic spasm, with or without loss of consciousness, and general or local in distribution. The causes of convulsions of early life have been approached from many angles. It is a well known fact that children are more susceptible to convulsive seizures, due to their lack of mental development and balance.

It will be the purpose of this paper to review the literature on hypoglycemia, and to show that this syndrome may be one of the causative factors in the production of the convulsive seizures of the young.

In 1926 Josephs<sup>1</sup> made a suggestive contribution to the subject of a possible connection between hypoglycemia and the ordinary eclamptic convulsions in infancy and childhood. A number of cases was reported in which convulsions developed after fasting, often accompanied by fever. This result, however, still left the question unsettled whether the hypoglycemia was the cause, the accompaniment or the result of the convulsion; whether the low blood sugar and convulsions came from the

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same cause; or whether the association was purely an accidental one.

The symptomatology includes fatigue, anxiety, gnawing hunger, tremors, hot flashes, profuse perspiration, vertigo, convulsions and coma. Symptoms<sup>2</sup> appear in different individuals when the blood sugar is between 40 and 50 mg. per hundred cubic centimeters of blood.

Lowered blood sugars have been produced by alkalosis and also following first degree burns. There has also been found a correlation between hypoglycemia and the physical condition of runners at the end of a race, such as the marathon. It (hypoglycemia) has been found in progressive muscular dystrophy. Other observers have noted a hypoglycemia in parturients. Van Creveld<sup>3</sup> made a study of sixty premature children during fasting and noted a lower blood sugar than usually occurs in full term children of the same age. He considered this fact to be an argument for the functional immaturity of the premature.

Hypoglycemia may result from definite pathological changes<sup>4</sup>. These fall into three etiologic categories: hepatic, endocrinal and pancreatic.

Hypoglycemia of hepatic origin is due to disturbances either in the sugar mobilization or in the storage functions of the liver. Lowered blood sugars occur with parenchymatous changes in the liver caused by chloroform, arsphenamine, by the fungus *Agaricus bulbosus*, by phosphorus, by cancer and by hydrazine.

Josephs<sup>5</sup> reported eight cases of hypoglycemia in children which he believed was of liver origin. The postmortem observations of fatty degeneration of the liver cells, in two of these cases, confirmed his opinion.

Hypoglycemia frequently occurs with certain abnormalities of the pituitary, thyroid, and suprarenal glands. Suprarenal and pituitary extracts will raise the blood sugar which suggests that these glands may be a causal factor in lowered blood sugar. Following subtotal thyroidectomy there has been noted a depressed blood sugar level. One investigator is of the opinion that the manifestations of Addison's disease and of glycopenia are similar.

Hypoglycemia induced by the injection of insulin is so well known that it requires no discussion. Certain tumors of the pan-

creas have been reported as a cause of glycopenia. Compensatory hypertrophy and hyperplasia of the islands of Langerhans in the pancreas of a child born of a diabetic mother, have been reported<sup>6</sup>. Phillips reports a case of hypoglycemia in an adult which was associated with hypertrophy of the islands of Langerhans.

Schmidt<sup>7</sup> made blood sugar determinations before death, at the time of death, and 1 hour after death on thirty-three patients (non-diabetic) dying in one hospital. He found that 36 per cent showed a blood sugar at death of 28 to 75 milligrams per hundred cubic centimeters of blood, thus showing that there may be a terminal hypoglycemia.

Griffith<sup>8</sup> reported 9 cases of hypoglycemia in children. His observations confirmed those of Josephs. In his investigation he found that in practically all of his cases there was a decided tendency for convulsions to develop in the early morning before breakfast, although a low blood sugar might readily occur in convulsive conditions in children who have not been fasting.

Fever likewise has been suggested as influencing the development of hypoglycemia, and in nearly every case reported in children this has been a finding. In regard to the action of the fever it is of the most frequent occurrence for a child to develop a slight digestive disturbance with fever, loss of appetite and perhaps vomiting. The child may go to bed in this condition and awaken with fever, and possibly a continuation of the vomiting. The occurrence of a convulsion in combination with this syndrome has been repeatedly witnessed by every physician. However, not every child who develops these symptoms has convulsions. It is evident, therefore, that the combination of short starvation with fever is not all that is necessary to produce the convulsive condition.

This problem has not been solved. When it is, it will probably be linked up some way with the action of the internal secretory glands, plus a greater understanding of carbohydrate metabolism. Our present knowledge makes it appear evident that in convulsions in children there is a frequent association between this disorder and the existence of a low blood sugar content.



Whether this is an etiologic relationship has not been definitely determined as a low blood sugar may exist without the occurrence of convulsions. The benefit that has been obtained in some cases of hypoglycemia by feeding a high carbohydrate diet makes the subject of great interest and one that is full of interesting possibilities.

#### REPORT OF CASES

Case 1. B. S., a boy, aged three and one half years. The past history revealed the occurrence of two generalized convulsions. The first one happened when he was 18 months old, and followed a day of excitement. The second convulsion occurred 3 weeks before he was placed under observation. Each of these convulsions occurred in the early morning, after the child had exerted himself the previous day, had eaten little, had vomited that night and appeared drowsy before going to bed. The mother attributed his first convulsion to his eating a small piece of candy Easter egg. She was unable to account for the probable cause of the second one.

His third convulsion occurred on February 18, 1930, the day after Mardi Gras. Mardi Gras, he spent down town taking in all the interesting happenings, and naturally taking more than his usual amount of exercise. His mother stated that he ate very little that day, due to the great excitement. She positively knew that he ate no indigestive article of food. Late that afternoon he developed a rather high elevation of temperature, vomited, and appeared extremely drowsy. He was put to bed in a semi-convulsive state and given a laxative. He was extremely restless during the night. In the morning (7:30 A. M.) he had a severe generalized convulsion. Physical examination revealed a convulsive state, and slight secondary anemia. No evidence of rickets or spasmodophilia was found. His temperature was 104° by rectum. Treatment consisted of the usual things done for convulsions, together with huge quantities of orange juice when the child was able to swallow. He came out of the attack after 2 hours, although he was more or less stupid throughout the day. Thinking perhaps that these convulsions might have been due to hypoglycemia, a blood sugar was done, and it was reported 46 mg. per 100 cc. of blood.

During this time, he has shown great improvement. He is much more active now, sleeps better, and has gained nicely. There have been no more convulsions, since he has been given a high carbohydrate diet.

Case 2. A. R., a boy, aged 3 years. This little fellow came from a family of convulsive children. He has three sisters, and the youngest and the oldest had many severe convulsive attacks during infancy. The history gave evidence of several severe convulsions extending over a period of two years. Thinking perhaps that he might show a low blood sugar, one was ordered. It was reported as 60 mg. per 100 cc. of blood, and 6 weeks after that it had dropped to 53 mg. per 100 cc. of blood. Reasoning that it might be due to a lack of secretion of the cortex of the adrenal, one of these preparations was given by hypodermic every other day, without results. In fact at the end of this treatment the blood sugar was 50 mg. per 100 cc. of blood. Six months later this baby had lobar pneumonia which was ushered in with three hard generalized convulsions. About eight months ago (Feb. 1931), he had another convulsion due to a digestive upset. Since that time he has been given a high carbohydrate diet. Several days ago (Sept. 19, 1931) his blood sugar was 99 mg. per 100 cc. of blood. It would be interesting now for him to develop a high elevation of temperature, and to observe whether or not convulsions would take place.

Case 3. J. S., a boy, aged 3 years. This child was admitted to the City Hospital May 18, 1931, with diarrhea, vomiting and high temperature. He had three severe convulsions on the day of admission, and continued to vomit. Physical examination revealed a convulsive state, slight secondary anemia, malnutrition, and moderate rickets. His blood Wassermann was negative. Blood sugar was 60 mg. per 100 cc. of blood, after the child had taken and retained a considerable quantity of orange juice and glucose. This child was placed on a high carbohydrate diet, and has had no more convulsions.

Case 4. B. S., a girl, aged 2 years. This child was admitted to the City Hospital, Feb. 2, 1931, with a history of frequent convulsions when she developed a gastrointestinal upset. These convulsions come on after vomiting, and are especially liable

to occur when diarrhea accompanies the vomiting. High temperature may or may not be present with the convulsions. Physical examination revealed slight rickets, but no spasmophilia. Her blood Wassermann was negative. The blood sugar was 63 mg. per 100 cc. of blood. She was discharged in a day or so greatly improved. She has had no more convulsions, since being placed on a high carbohydrate diet.

Case 5. J. W., a boy, aged 18 months. A history of numerous convulsive seizures extending over a period of 12 months was obtained. When this child was seen on August 18, 1931, he was recovering from a generalized convulsion. Physical examination revealed temperature 104°, malnutrition, and acute tonsillitis. No evidence of tetany was found. A blood sugar determination was made on Aug. 22, four days after the convulsion, which showed 60 mg. per 100 cc. of blood. This child was placed on a high carbohydrate diet, as his convulsions might have been due to hypoglycemia.

Case 6. C. T., a boy, aged 11 months. This child has had many convulsions (generalized) and he is mentally retarded. The diagnosis hinges between brain tumor and encephalitis, although his eye grounds at each examination have been negative. A blood sugar was made simply as a matter of interest, and a reading of 65 mg. per 100 cc. of blood was obtained. Forcing a high sugar diet has been absolutely of no value to him, as he continues to have as many and as severe convulsions as before.

Case 7. C. V., a boy, aged 3 years. A history of frequent vomiting spells accompanied by high temperature was obtained. He has had only one convulsion, and that occurred about six months ago. A blood sugar analysis showed 52 mg. per 100 cc. of blood. The usual treatment for convulsions was carried out, and he rapidly came out of it. One month later on a high sugar diet his blood sugar was 87 mg. per 100 cc. of blood. He had had no more vomiting attacks or elevations of temperature since he has been given lots of carbohydrate in his diet. He would average a vomiting spell about every two weeks before treatment. His general condition seems improved, his mother stating that he is more active and does not tire so easily as before.

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## THE DIAGNOSIS AND TREATMENT OF HEART FAILURE\*

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Diseases of the heart form a considerable proportion of the cases with which every practicing physician has to deal. Heart disease is the most common single cause of death per annum in the United States.

The advanced stages of cardiac failure are recognizable by everyone, while the early stages of heart failure are often difficult to recognize. Makenzie has emphasized the opportunity of the family physician in detecting the early stages of heart disease. Through years of close association he may observe the progressive stages in its development before broken compensation begins. The essential features of the average cardiac case can be brought to light by an accurate history and a careful physical examination.

One of the earliest symptoms of heart disease is shortness of breath on climbing stairs, or walking up a moderate incline. A digestive symptom with a feeling of gas on the stomach, or epigastric distress after a heavy meal, may be the first symptom to appear, and may be regarded as indiges-

\*Read at a meeting of the Southeastern Division of the Association, Geneva, August 11, 1931.



tion by the patient. The patient may first complain of an "all gone feeling", or physical fatigue. Then again oppression and pain in the chest, or palpitation on exertion may first direct the patient's attention to his heart. As the left ventricle begins to fail, attacks of cardiac asthma, particularly at night, which may simulate bronchial asthma, may occur. These attacks do not yield to adrenalin. Pulmonary edema with cough, expectoration, and bloody sputum, may simulate tuberculosis. As the right ventricle begins to fail there is tenderness in the liver region below the right costal margin, venous engorgement, suppression of urine, edema, and later ascites and effusion in the pleural cavities.

Two simple tests for the diagnosis of early cardiac failure are the exercise and blood pressure tests. The exercise test consists of having the patient hop for a minute or two or climb a flight of stairs. Count the pulse before and after exercise, and note the effect of exercise on the patient. The normal heart speeds up, but there is no marked dyspnea or cyanosis and the heart rate returns to normal in three or four minutes. The abnormal heart responds by an increase in rate, the patient is dyspneic and cyanotic, and the pulse does not return to normal in a few minutes, but remains elevated. On taking the patient's blood pressure, you may notice a gradual fall over a period of several days, or some systolic beats may come through at 160-180 mm., and other beats may not come through until 120-130 mm. This means a weakened heart muscle.

The only therapeutic measures which arise in the minds of many physicians in the treatment of their cardiac patients are rest and digitalis. It is true that rest and digitalis are most important but there are other therapeutic attributes which we must employ if we are to obtain the best results on our cardiac patients.

How much rest should the patient with myocardial failure have? Fixed rules as regards rest should not be laid down. Some physicians prescribe too little rest, others too much. An acute carditis demands rest until the temperature and pulse are normal and until moderate exercise does not cause the temperature to rise, pulse to become unduly rapid, or dyspnea to make its appearance. The patient with a failing

heart needs rest long after the more urgent symptoms have disappeared. Any patient who is sick enough to go to bed with signs of a failing heart, irrespective of the slight degree of failure or the rapidity with which the signs disappear, should remain in bed from four to six weeks, and in many cases a great deal longer, depending on the degree of myocardial failure. If myocardial damage is severe, he should remain in bed until all signs and symptoms have disappeared, the pulse should be normal, and moderate exercise should cause no undue elevation of the pulse or dyspnea. The important criterion is, how well is the heart doing its work?

As regards sedatives, the use of morphine on the patient with a badly decompensated heart, until compensation improves, is an indispensable procedure. As compensation improves you may resort to milder sedatives, as bromides, allonal, luminal and others.

There comes a time when the activity and exercise of our cardiac patients must be regulated. Too little exercise as well as too much exercise is harmful to the heart muscle. The myocardium, like the skeletal muscles, needs exercise, so it is important not to keep our patients in bed too long. Graded exercises increase cardiac efficiency. Massage and passive motion, to walking varying distances, are means of treating the convalescent cardiac patient. Walking is probably the best exercise as it can be carefully controlled.

The functional activity of the heart muscle is very dependent upon an adequate diet. Individuals who are inadequately nourished may actually develop a myocardial weakness. On the contrary, you often see obese people with a myocardial weakness due to a deposition of fat in the myocardium. Obesity is very injurious to the failing heart, and stout patients should be gradually reduced. Large meals should be forbidden at all times as they increase the work on the heart. A patient who is not overweight should receive adequate nourishment in the twenty-four hours to cover his bodily needs. He should eat five or six meals a day, at two hour intervals, rather than three large meals. The diet should be simple, nourishing, and easily digested. In acute carditis it is best to give liquid and semisolid foods, but when

the condition becomes more chronic, the patient should be given a more balanced diet, generous in fruits and vegetables, so as to receive his normal quota of vitamins and mineral salts. An excess of protein should be avoided as protein foods increase metabolism and thereby increase the work on the heart. A relatively high carbohydrate diet is of definite benefit in myocardial failure, as a fatigued heart muscle is depleted of its glycogen content. The diet in myocardial failure should be relatively low in protein, relatively high in carbohydrates, and low in salt, to avoid water retention.

The Karrel diet should be mentioned. It consists of 800 cc. of milk in twenty-four hours with no other foods and little additional fluids. (Fluids limited to 1200 cc.-1500 cc.) It is of definite benefit in some cases of myocardial failure with edema. It is a starvation diet and should be used only for short periods. After four or five days the milk should be increased to 1000 cc. and simple foods added to the diet, such as cereals, soft boiled eggs, milk toast. This diet frequently causes a rapid disappearance of the edema.

Cathartics for the cardiac patient should be judiciously chosen. Unless there is marked edema, impaired kidney function, or poor digitalis absorption, drastic catharsis with saline purges should be avoided. Saline purges exhaust and weaken the patient, and interfere with his rest. Such cathartics as cascara, agarol, licorice powder or petrolagar are sufficient.

Diuretics are indicated only when the patient is edematous or if ascites develops. In addition to the diuretic effects obtained from digitalis, other drugs used for their diuretic action are theocin (theophyllin), diuretin (theobromine sodio-salicylate), euphyllin, and caffeine. If one diuretic is not effective, another may be tried. Probably the most efficient diuretics that we possess at the present time are novusarol (merbaphen) and salyrgan. These are mercurial preparations, administered intravenously or intramuscularly in a dose of 1 or 2 cc. It is best to give a dose of  $\frac{1}{2}$  cc. as a preliminary dose, to test the patient's susceptibility, to be followed the next day, if no unpleasant symptoms result, by a single dose of 1 cc. These drugs work best if administered with ammonium

chloride, 1 gram four times a day. The ammonium chloride should be started several days before novusarol or salyrgan are given. The patient should be in bed, with fluids and salt restricted.

Digitalis is the sovereign drug in the treatment of heart disease. The chief essential in selecting a digitalis preparation is that the preparation should be fresh, potent, and obtained from a reputable manufacturer. It is a good idea for the physician to familiarize himself with the use of one digitalis preparation. Perhaps the powdered leaves of digitalis and the tinctures are most commonly used, but other preparations such as digitan and digitofolin are perhaps equally as efficacious if we know their potency.

As regards the mode of administration the oral route is the route of choice. It is simple, safe, and efficacious, and absorption is just as complete as by other routes. There is still some discussion and variance of opinion as to the dosage and method of administration.

To my mind, the principal errors that are made in digitalis therapy are the use of homeopathic doses, regarding the drop as a minim, and a failure to discriminate between patients who should be digitalized rapidly, and those who will respond to the small divided dose method of administration.

A few years ago so much was written on the toxic effects of digitalis, that many physicians were deterred from giving adequate doses, because of the fear of producing heart block. Many more patients suffer from lack of digitalis therapy, than from too much digitalis. It would be difficult for any of us to survey the literature and find a proven death from digitalis intoxication. There are definite signs and symptoms of the toxic action of digitalis, and if we properly observe our patients there is no cause to worry about an overdose of digitalis.

Another cause for digitalis failure is the physician regarding the drop as a minim. This is an erroneous idea. Different digitalis tinctures, and the varying size of the medical droppers, will yield from forty to sixty drops to the fifteen minims. When prescribing the tincture it is best to use a graduate measure, but if this is not available you should use a minim dropper that



yields fifteen minims to 1 cc., so as to be sure that your digitalis dosage is accurate.

We should not abide by any arbitrary rules when giving digitalis. Our patients must be individualized. The dose and rate of administration of digitalis must depend on the degree of myocardial failure. The "effective concentration" of digitalis in the body necessary to produce therapeutic results depends on the degree of myocardial failure.

I do not know of any better criterion for the administration of digitalis, than that used by William Whithering 150 years ago. He said: "Let the medicine be given until it acts either on the kidneys, stomach, pulse, or bowels, and let it be stopped upon the first appearance of any of these signs." We should discriminate between patients with an extreme degree of myocardial failure, who need the full therapeutic effects of digitalis in eighteen or twenty-four hours, and the ambulatory type of cardiac failure who will respond to the small divided dose method of administration. In treating patients with a rather marked degree of myocardial failure, the digitalis should be given in larger doses, over a shorter period. For instance, it is a perfectly safe procedure to follow the law of the modified large dose method and administer .5 gm. ( $7\frac{1}{2}$  grs.) the first dose, plus .5 gm. ( $7\frac{1}{2}$  grs.) four hours later, plus .2 gm. (3 grs.) every four hours until therapeutic results are obtained. In this way it is possible to produce the desired therapeutic results in twenty-four hours or less. If the patient has only a mild degree of cardiac failure, the small divided dose method of digitalis administration may be employed. By this method .1 gm. to .2 gm. of the powdered leaves is administered every four hours until the desired results are obtained.

Recurrent attacks of cardiac failure may be prevented in many instances by the judicious and continuous use of small daily doses of digitalis. The consensus of opinion is that the average adult requires from .1 gm. to .2 gm. of digitalis daily, as a maintenance dose.

In conclusion, I would like to say that we must individualize our cardiac patients if we expect to obtain the best results. The time is not at hand when we can mechanically dispense rest, exercise and digitalis.

## ECLAMPSIA\*

J. P. STEWART, M. D.  
Attalla

Eclampsia is a term applied to convulsions in the pregnant and puerperal state.

Fortunately, it is a rare condition, occurring, according to a majority of observers, once in five hundred cases. My individual observation and experience would indicate a far greater per cent. I have seen in my forty six years of practice at least twenty-five cases. Multiply this by five hundred and it would make my number of labor cases amount to twelve thousand five hundred. I do not believe I have delivered that many women.

Eclampsia is always to be regarded as a serious matter. One should always be guarded in making any promise as to what he can do in the way of relief. You never know, especially if you are called to a case you have never seen before, how high the blood pressure is, how strong the heart is, what condition the kidneys are in, or what resistance you are going to have in making delivery. Therefore never let your promise of the result be too bright. No matter whether the convulsions are in the first, second, or even the third stage of labor, there is always more or less gravity.

The symptoms of eclampsia are so well known that I will not dwell on them here. Nearly every physician, who has practiced for any length of time, has seen one or more cases and can easily make a diagnosis.

Fortunately the convulsions in eclampsia are of short duration, lasting only from thirty seconds to a minute or so. The congestion of the face, neck and brain is so great that if they were to last longer the implication of the respiratory centers would be fatal. Even with so short a duration as 20 to 30 seconds, the coma following is most profound, lasting from a half to several hours, and the memory is so impaired that there is no recollection of what follows for some time; showing a very damaging effect on the brain. This damage, however, fortunately as a rule, is not permanent.

Of the etiology of eclampsia little is known. We do know, of course, that it is

\*Read at a meeting of the Etowah County Medical Society, Gadsden, August 5, 1931.

a result of the pregnant state, but why pregnancy should cause a trouble like this has been of considerable conjecture and as yet not fully determined.

Some writers claim it is due to uremia; some to pressure of the distended uterus on the intestines and the abdominal glands; some to its obstruction of the ureters or the renal vessels; others that it is due to interference with the functions of the liver; still others that the cause emanates from abnormal conditions inside the womb itself. There is a toxemia due to the pregnancy, but why and what has not been satisfactorily explained.

The honor of first calling the attention of the profession to the finding of albumin in eclampsia belongs to Dr. J. C. W. Lever in 1842. Since then a large majority of the profession has accepted the theory of acute nephritis as the cause. As to whether we can have albumin in urine in an abnormal and persistent quantity without some form of nephritis I cannot say. I do know that I have always found albumin in the urine of my eclamptics with more or less edema.

One writer points out as a marked difference from chronic Bright's, that where you have in the chronic form increase in the quantity of urine and a low specific gravity, in the acute form, as in pregnancy, the quantity of urine is decreased and the specific gravity high. But as this often occurs in health, I doubt its accuracy as a diagnostic method.

The treatment of eclampsia begins with the management of your cases of pregnancy. In no other condition is there more assurance that "an ounce of prevention is worth a pound of cure" as in this. Weekly examination of the urine is to be regarded as one of the best precautions, especially if any headaches or edema begin to show. Persistent albumin in any quantity should be met with special treatment. No matter what theory of the cause of eclampsia you may have adopted, you will save yourself and your patient a great deal of trouble if you will at once begin efforts of elimination.

Give a milk diet. I prefer buttermilk. Sweet milk is allowed if more desired. Tincture of the chloride of iron should be given in full doses three or four times a day. It is a diuretic, a hematinic and a

tonic. All these actions are to be desired in the treatment of eclampsia. Should a milk diet be not well borne, tea and buttered toast, and soups and broths, are good substitutes. If the albumin persists in increasing quantities, get free catharsis with calomel, jalap, phenolphthalein, or Epsom salts. This gives elimination of the poisons from the blood and will be found very beneficial.

If cerebral or prodromal symptoms of convulsions threaten, a hypodermic of morphine is indicated. I have found that morphine has given me the most satisfactory results in these cases.

If the functions of the kidneys are impaired, and they usually are, and do not respond to such diuretics as the tincture of iron, the infusion of digitalis, or acetate of potash, etc., put your patient in a hot bath and give her a good sweating, urging the drinking of water to facilitate the diaphoresis. After removal from the bath have her wrapped in blankets and put to bed in order that the cooling of the body may be gradual.

If the symptoms grow worse and convulsions intervene, you are now up against an extremity. The pregnancy has not reached its term. Shall labor be induced? Or shall an attempt be made to carry the patient through to the end? My decisions have been fifty-fifty. No matter which way you decide you will wish you had done the other. One I tried to carry on through. I lost both mother and child. Another I terminated the pregnancy at the sixth month and saved the mother only.

When you have convulsions early in pregnancy first determine if they are eclamptic. There are often other kinds of convulsions in pregnant women, such as caused by epilepsy, hysteria, fright and vermes. One of the worst cases of convulsions I ever had in pregnancy was from the latter. An examination of the urine, with the character of the seizures, will decide your diagnosis. If eclampsia, you will at once make efforts directed towards elimination. I use Epsom salts giving a tablespoonful of a saturated solution every hour until I get results, quiet the nervous system with morphine and supporting my patient with milk.

Public opinion is against abortion. You will have to let the measure of gravity in



each case help you form your decision. You have, as an assisting factor in helping you to determine the best procedure, the fact that more babies are born dead, in puerperal eclampsia, than alive.

Puerperal eclampsia more frequently begins in the first stage of labor and more frequently in the primipara. Where you have a first stage lasting from 24 to 48 hours you may have as many as 30 to 60 convulsions. One writer reports that he had as high as 80. I have been able to keep the number within the limit of a dozen or less.

Efforts at elimination and control of the nervous system are all that you can do until you get your dilatation. You can aid or hasten dilatation by some mechanical measures, such as an early rupture of the membranes or by stretching the cervix with the index finger.

Most of my cases have been primipara. One attack seems to render them immune to further trouble. However, one of the worst cases I ever had was in a multipara. This was the case already mentioned, in which I induced labor at the sixth month. This woman had six to eight convulsions per day for three days. She had had active elimination through the bowels and kidneys and even skin, for a week previous; a milk diet and tincture of iron. She began one afternoon to have one seizure after another so fast that her life was endangered. This went on all night. I had her so completely narcotized that her heart and respiration were lowered to a most alarming degree. Even then when aroused she would immediately go into convulsions. Her edema was very great. Her urine seemed at least 50 per cent albumin. Consultation was obtained the next morning. One of us suggested bleeding. This was done, twelve ounces of blood being taken from the median basilic. The heart beats grew stronger and the respiration better with every drop of blood withdrawn. The convulsions ceased and the patient revived but complained of being blind. She continued in this condition for four days. The convulsions returned. It was then I induced labor. The child was lost, the mother saved.

There is another thing to be remembered in eclampsia. It predisposes to postpartum hemorrhage, also infection; the latter on

account of the great amount of manipulation and mechanical aid necessary in making delivery, and to the lowered resistance to germ invasion. After the third stage thoroughly cleanse the pudenda and adjacent field. Paint all lacerations with iodine or a 4 per cent solution of mercurochrome; stitch up any perineal tear, and direct the nurse to adopt a rigid regimen of aseptic cleanliness.

Postpartum hemorrhage is partly due to the defibrination of the blood in this disease, prolonging the clotting period, and to the effect of the sedatives which necessarily were given to control the convulsions. These produce an inertia in the muscular structure of the womb, facilitating continuous bleeding from that organ. Fibrin, given intramuscularly, and an ampule of pituitrin, with such mechanical pressure as you may see fit to apply will help you solve this problem.

Post-eclamptic symptoms are not very common and as a rule are easily controlled. While I have had quite a number, two or three somewhat stubborn, they all ultimately recovered.

## PERNICIOUS ANEMIA\*

### REPORT OF CASE

CLARENCE R. BENNETT, A. M., M. D.  
Eufaula

### *Etiology*

Addison, in 1855, gave a very good description of pernicious anemia, describing its clinical symptoms. Biermer, in 1875, again described the disease and also the blood picture and gave it the name, pernicious anemia.

The etiology of the disease is not known. It occurs between the ages of 40 and 60, and more often in men than in women. Many theories as to its cause have been advanced. Current opinion as to what happens in pernicious anemia is that there is primarily a destruction of the red blood cells, most probably by the reticulo-endothelial system of the spleen, lymph nodes, liver and bone marrow and an abnormality of blood formation by the blood forming organs. Others think that pigment metabolism plays an important part. When the process of blood destruction begins, the

\*Read at a meeting of the Southeastern Division of the Association, Clanton, October 6, 1931.

large phagocytic cells of the reticulo-endothelial system engulf the red blood cells and the bone marrow begins an abnormal regeneration of red blood cells. Thus various types of embryonic blood cells are thrown into the blood stream.

#### *Pathology*

The blood is greatly reduced. The bone marrow shows red gelatinous marrow which replaces the fat. The spleen, liver and lungs show marked pigmentation and evidence of blood destruction. There is fatty degeneration of the heart, liver, spleen and all organs of the body. The skin has a distinct pallor, with a lemon yellow color. The tongue is smooth and often abnormally red. The gastric mucosa is atrophied. Foci of degeneration are found in the posterior and lateral columns of the spinal cord, particularly in the cervical region.

#### *Diagnosis*

Diagnosis is made on the symptoms and signs and laboratory findings which will be discussed in the case report to follow. In differential diagnosis pernicious anemia must be distinguished from the severe secondary anemias, as seen in gastric carcinoma, in sprue and in the disease caused by tapeworm. In these, however, there is severe emaciation and the latter two are seldom seen in this State.

#### *Prognosis*

Before the advent of liver therapy in 1925, by Minot and Murphy of Boston, the disease was usually fatal.

#### *Treatment*

Rest in bed should be instituted until the blood count approaches normal. Give six or eight vials of liver extract daily in orange juice or grape juice and add liver to the diet once daily. Continue this until the blood count becomes normal. Then, by frequent blood counts, determine the doses necessary to keep the patient's blood count high. This can be said safely to be about one vial of liver extract three times a day. Each vial represents about three and one-half ounces of raw liver.

Dr. Sturgis of the University of Michigan has done much work with ventriculin with very good results. If a patient gets tired of liver, ventriculin may be used as a substitute. I believe, though, that liver is the better to start with.

Twenty to thirty drops of dilute hydrochloric acid in a glass of water should be given with each meal. Gastric digestion and appetite will improve immediately. Foci of infection should be removed. The general diet should be regular and the meals well balanced, with an abundance of meats, milk, fruit and vegetables.

Under this treatment the patient whose case I am about to relate improved wonderfully. In less than a month's time the blood count increased from 650,000 to 2,500,000 and the hemoglobin from 60 to 75. The patient has a good appetite and feels very much stronger than she did when treatment was begun. The cord symptoms have improved slightly.

#### REPORT OF CASE

Mrs. S., aged 58, came to my office September 18, 1931, complaining of extreme weakness, numbness, a tingling sensation and pain in her feet and legs, loss of appetite, nausea, vomiting, and soreness of her tongue.

Her family and marital histories were not significant, her people having lived to be quite old. She has five children living and had had no miscarriages.

Her past history shows that she had had measles and mumps in childhood. In February 1931, her tonsils had been removed, the operation having been advised with the hope that the peripheral neuritis of her arms and legs would be altered. (Here I wish to state that she had been seen by several doctors, all of whom treated her neuritis as a peripheral neuritis without looking for the real disease in the background.) She passed the menopause at fifty.

#### *Present Illness*

The patient's present illness began about a year prior to her visit to my office when she noticed that any exertion made her very weak. This history is in keeping with Addison's observation as stated in his description of the disease: "This disease makes its approach in so slow and insidious a manner that the patient can hardly fix a date to the early feeling of that weakness which is soon to become so extreme". The weakness was soon followed by a beginning numbness, tingling and then pain in her feet and toes. This soon involved her fingers and hands. The numbness and pain became so severe that walking was



difficult and part of her time was spent in bed. She soon noticed that her complexion was pale, almost lemon yellow, and her friends also spoke about this. At times her tongue would get very sore. At one time for a period of one month she seemed to feel much improved; this evidently was a remission which frequently happens. Her weakness grew continually more marked and two months ago she lost her appetite and would become nauseated and frequently vomit after eating. Any exertion caused palpitation. Even now (October 6, 1931), she notices that in a dark room she loses her sense of balance and is worried and more nervous than before her illness.

#### *Physical Examination*

Examination revealed first of all an extreme degree of weakness. Her complexion was pale, the skin a lemon yellow. Nutrition was very good, out of proportion to the malnutrition one would find in malignant disease. Her tonsils had been removed and her teeth extracted. Blood pressure was 150-90. Neurological examination showed an increase in deep reflexes and diminished tactile sensation to touch, heat and cold. When standing in a dark room with eyes closed she would lose her balance.

A Wassermann test and a urinalysis were negative. Gastric analysis showed achylia gastrica. Blood examination on the day of her first visit to me showed a red blood count of 650,000, hemoglobin of 60, and a white blood count of 4,000. The color index was more than 4. A blood smear showed marked variation in the shape of the cells, poikilocytosis, and variation in size, anisocytosis. An occasional nucleated blood cell could be seen and some stippling.

#### *Summary of Symptoms and Signs*

The patient presented what I considered a typical text-book picture of pernicious anemia. There had been the slow onset of weakness, usually the first symptom to be noticed, and the gastro-intestinal symptoms of loss of appetite, and nausea and vomiting. Diarrhea, frequently present, she had not had. She had had a sore tongue from time to time. Apparently there had been but one remission of symptoms, lasting for a month. Her nutrition remained good. Palpitation mani-

festated itself on any exertion. She had an achylia gastrica. The paresthesias of numbness, tingling and pain, with an increase of reflexes and a mild loss of sense of balance in a dark room and with eyes closed were evidences of the usual cord changes.

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### THE COUNTRY DOCTOR\*

J. F. HUEY, M. D.  
Hillsboro

In attempting to convey to the minds of the laity, as well as to the more favored members of our profession, just what the country doctor is to the community in which he lives, moves, and has his existence, I fear that I shall fall far short of my expectations.

The country doctor is not only the medical adviser, but he is legal as well as spiritual adviser to his clientele.

He faithfully administers to his patients as long as breath remains, and when the end comes, he is expected to console the bereaved, sharing the grief of the family as well as their joys—when all is well. His duties are varied and arduous. With miles of muddy roads, he faces the storms of winter and the showers and sunshine of summers with equal fortitude on his daily and nightly rounds, on his mission of administering to the ills of suffering humanity.

He is forced to rely upon his own resources, as he can not call upon a specialist when emergency arises, but calmly works out his own salvation as well as that of his patient.

Many times the country doctor, while miles out on the mountain top or deep in the river bottoms, is confronted with a child suffocating from croup or a mother in the throes of death from abnormality of child birth with no human assistance within miles, but he usually comes out victorious by relying upon himself, and with a consciousness of duty well performed.

There are many of us who are too quick to refer our patients to the so-called specialist. A specialist as you know is one who "knows more and more—about less and less", but they have sprung up like mushrooms in response to public demand

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\*Read at a meeting of the Lawrence County Medical Society, Moulton, June 2, 1931.

to override the general practitioner as they skim the cream off the medical pitcher.

It is not my purpose to condemn in toto the tendency to specialization but to sound a warning note against the tendency of the profession as well as the laity to seek the services of the specialist on the least provocation, with the usual result, that the specialist gets what cash the patient happens to possess, and the country doctor gets promises and sometimes criticism for his part of the farce.

We are not as zealous as we should be to demand respect for our opinions, based upon years of study and experience.

If we are not able, from a standpoint of certainty, to demand respect for our opinion upon a given point, then we fall short of what is by right due us.

The medical profession has made more progress within the last two decades than all other professions, and year by year the requirements are greater and the pecuniary outlay is increasing by which a medical education and a license to practice may be obtained. Consequently fewer men are enrolled in our medical schools than have been in several years, and as a result the country doctor, in a few more years will be numbered among the "has beens".

Therefore we should occasionally stop, look and listen to see where we are.

It is not my purpose to attempt to prescribe any set rules by which we may be governed, but merely suggest a few things whereby we might possibly be benefited.

Some of us too often neglect the vital part of our work, that of conserving the interests of those dependent upon us. The true physician is at all times anxious and alert to respond to the call of suffering humanity wherever found, and if he be true to his calling, nothing gives him more unalloyed pleasure than to know that he has been able to relieve some poor sufferer. But there are limitations.

Our patients are too prone to think that "old Doc" is a good fellow, is just one of us, and doesn't need much money. As a consequence installments on the car and the furniture are paid and the mail order is gotten off while the doctor waits for his fee.

We should impress upon our patients the fact that we have to eat, wear clothes,

buy automobiles, gas and oil, and that our only source of income is from administering to their wants and necessities.

We are more closely interwoven with the lives of our patients than all other professions, including the ministry. The physician knows more of the sorrows, disappointments and heart aches of his patients than does the pastor of his flock. His services when needed are far more important than those of others, sometimes meaning life or death. Therefore we have the right to demand a respectful attitude from them and not as the couplet goes:

"God and the doctor we all adore  
Just on the brink of danger—not before  
The danger passed both are alike requited  
God is forgot and the doctor slighted".

If we demand our just dues and conduct ourselves as becomes a great profession, of which we are component parts, we will obtain them.

We should ever be mindful of the rights of our colleagues and at all times observe the golden rule toward them. We country doctors are the salt of the earth in our profession, but, "if the salt have lost his savor wherewith shall it be salted"?

We are architects of our own fortune, and if we will but demand strict adherence to the traditions of our beloved profession, we will obtain that which is justly ours, and bask in the appreciation of a grateful clientele.

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**Silver Nitrate Ampules and Capsules.**—The A. M. A. Chemical Laboratory undertook an investigation of silver nitrate capsules and ampules to determine whether the market supply was satisfactory. The Laboratory found that the various brands of silver nitrate ampules contained in both wax and glass ampules showed that the strength of the silver nitrate solution is generally somewhat greater than the amount claimed and that practically none of the silver is absorbed by the wax ampule. The Laboratory points to the possible danger from fragments of glass which may form when the glass ampule is opened and which may reach the infant's eye when the silver solution is instilled. The Council on Pharmacy and Chemistry considered the report of the Laboratory and authorized its publication. In recommending endorsement and publication of the report the Council's referee expressed gratification at the reassurance given by the report that the wax capsules do not inactivate the silver nitrate. (Jour. A. M. A., September 5, 1931, p. 706.)



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February 1932

DR. AARON LAFAYETTE HARLAN  
1861-1932

On January 4, 1932, in the seventy-first year of his life and after but a few hours of struggle the subject of this sketch slipped peacefully and quietly into The Great Beyond. A gradual failing of health, due to aortic and cardiac complications, had been his part for a year or more and his passing came as a surprise neither to himself, his family nor his friends. Despite this physical handicap, during this past summer, as State Senator from the tenth district and as Chairman of The Committee on Public Health of the Senate, he was to be seen almost daily mounting the steep steps leading to the State Capitol, in order to give to his people the benefit of his wise and honest counsel. The writer of this brief sketch was privileged to frequently discuss with him many of our public health problems in which he always manifested a deep concern. A rugged honesty, an almost celestial kindliness, coupled with an infallible human understanding, were reflected in his every action and speech. These native traits he carried with him in all walks of life and served to endear to himself in an unshakable fashion friend and patient alike. But a few hours before his death, he was found at the bedside of one of his suffering patients who refused to relinquish her claims upon him.

Of Dr. Harlan's loyalty and devotion to our Association and to the cause of organized medicine and to public health, no doctor in this State needs to be reminded. As a Life Counsellor, as President in 1927, and as a member of the State Board of Censors since 1930, he had served the Association in all of its coveted and responsible positions and few of its members

have given more unstintedly and more magnanimously to a perpetuation of the high traditions of our profession than did he.

Service to his fellow-man was the dominating note of his long and useful life.

Of his passing the State Board of Censors took cognizance in the following resolutions passed at its recent meeting:

## RESOLUTIONS

Whereas, It has pleased Almighty God, in His infinite wisdom, to remove from his earthly labours, Aaron LaFayette Harlan, a member of the Board of Censors of The Medical Association of the State of Alabama; and

Whereas, It is the sense of this Board that in his death the State has lost one of its most useful and beloved officials, The Medical Association of the State of Alabama a most revered and patriotic member, and this Board a member whose efficiency, loyalty and zeal were ever of the highest order, therefore be it

*Resolved*, That we, the members of the Board of Censors of The Medical Association of the State of Alabama, go on record as keenly regretting the passing of our late associate, and that we deeply sympathize with the family in this hour of bereavement, and be it further

*Resolved*, That a copy of this memorial be spread upon the minutes of the Board and, as added evidence of the high regard in which he was held, that a copy be sent to the family, and be given to the press.

JAMES MONROE WATKINS  
1870-1932

Just as this issue of The Journal was going to press word came of the passing of Dr. J. M. Watkins on January 25, the second member of the State Board of Censors to cross The Great Divide within a month. So unexpected was the blow that those most closely associated with him during his last days have yet to realize that he is gone. He died as he had lived—firm in the belief that all would be well.

Dr. Watkins was born in Pike County, Alabama in 1870. After receiving his early education in schools of his immediate community, he attended Auburn. His medical education was engaged in at Vanderbilt from which institution he was graduated in 1894.

Throughout his professional career he was interested in organized medicine, its ideals and its accomplishments. In 1923-25 he served as vice-president of the Association and in 1930 was chosen a member of the Board of Censors. In his death the Association and Board have lost a valuable counsellor.

## DR. WM. GROCE HARRISON

To fill the vacancy on the State Board of Censors created by the death of the lamented Dr. Harlan, President Gaines has appointed Dr. Wm. Groce Harrison, of Birmingham. Dr. Harrison needs no introduction to the doctors of Alabama; all who were so fortunate as to be in attendance at the last meeting of the Association, held in Birmingham, will recall with what grace, dignity and efficiency he presided as President of this body. He has been continually identified with organized medicine in this State since 1892, locating first as a general practitioner in Talladega. Being prompted by an inner urge toward specialization, he relinquished claim to a large practice in his home town, spent several years in preparation for his chosen specialty of ophthalmology and otolaryngology in the largest clinical centres both in this country and abroad, and then located in 1905 in Birmingham.

Dr. Harrison is a Life Counsellor of the State Association and an active member in many national scientific organizations. His cultural and scholarly attainments are such that, in addition to a large and exacting practice in Birmingham, his restive mind finds an outlet in his peregrinations to Vanderbilt where he holds the Chair of Professor of the History of Medicine.

The President is to be congratulated upon placing at the disposal of this Association the gifts and attainments of so seasoned a member.

## MALCOLM O. GRACE

Upon the death of Dr. J. M. Watkins, President Toulmin Gaines appointed Dr. M. O. Grace of Ozark to fill temporarily (until the next regular meeting of the Association in April) the vacancy created on the State Board of Censors. At that time it will become incumbent on the Association to fill the vacancy by election.

Dr. Grace is well known to the profession of Alabama having been a counsellor from the third congressional district since 1923 and having served as vice-president of the Southeastern Division of the Association from 1927 to 1931. For several years he was secretary-treasurer of the Dale County Medical Society.

He received his medical education at Vanderbilt University where he was graduated in 1909. In 1910 he appeared before the State Board of Medical Examiners and was granted a certificate of qualification to engage in the practice of his profession. Aside from the interest which he has uniformly manifested in public health, his chief interest now lies in the field of surgery.

## INFLAMMATION AND IMMUNITY

Since the dark days of "laudable pus", a local inflammatory reaction has been recognized as, in some sense, a protective mechanism against generalized infections. The inflammatory reaction following the entrance of staphylococci into the subcutaneous tissues, known as a "boil", prevents the infection from spreading through the body, while, on the other hand, a virulent streptococcus rapidly invades the whole system unless a local inflammatory process develops at the site of the initial infection.

Considerable study has recently been devoted by students of immunology and pathology to the mechanism whereby inflammation holds in check and localizes injurious agents. It has been shown that this localizing action is not confined to living, formed elements, such as bacteria, but is exerted also against any foreign particles, such as dyes, starch, etc., and even materials in solution such as egg albumin, horse serum, ferric chloride, and the like. If a local inflammatory process is produced in the subcutaneous tissues of the rabbit by a sterile irritant, horse serum, egg albumin or dyes injected into the inflamed area are not absorbed into the circulation, whereas, after injection into normal tissue, they can be detected very soon, and in considerable quantity, in the circulating blood. As Menkin<sup>1</sup> has pointed out: "An inflamed area can be considered as shunted off from the rest of the organism. It has its own metabolism, its own hydrogen ion concentration and its own modified circulation."

Similarly, when dyes, such as trypan blue, are injected directly into the circulation, they concentrate in the inflamed area, staining it more intensely than the normal tissues. This is also true of the pneumonic lung. The lung tissue affected

1. Menkin, V.; Arch. Path. 12: 802 (Nov.) 1931.



by the pneumonic process is much more deeply dyed than the normal area of the lung.

This sorting-out process, which seems to be so characteristic of local inflammatory reactions, probably explains the mechanism of so-called focal infections. The bacteria entering the blood stream from the original focus do not localize at points of lowered resistance, necessarily, but are held at places where some irritation has resulted in an inflammatory process, and are thus prevented from causing a generalized infection. *There is general systemic protection at the expense of local injury.*

Extensive experimental work on the mechanism of this fixation of foreign substances indicates that the factors involved are largely mechanical. No evidence could be obtained that phagocytosis was unusually active in the inflamed area. It has been shown, however, that one of the first changes in an irritated tissue is an increased permeability of the walls of the capillaries, both blood and lymph. This is followed by an outpouring of plasma, with a resultant network of fibrin. The vessels in the affected area then become thrombosed, and absorption is, consequently, retarded. Foreign particles in the circulation, therefore, whatever their nature, escape readily through the highly permeable capillaries, at the periphery of the inflammatory process, are then trapped in the mesh of fibrin and their escape prevented by the thrombosed vessels within the inflamed area. The foreign substances, therefore, accumulate in increasing concentration.

If this explanation is correct it follows that similar substances injected at the periphery of an area of inflammation should be prevented from entering it. This was found to be true. When trypan blue was injected into a sterile inflammatory reaction (produced by the injection of a killed culture of staphylococcus) the dye stained intensely the normal tissue surrounding the inflamed area, but no trace of it appeared at the centre of the inflammatory site. Bacteria, also, disseminated rapidly into the normal tissue but could not be found in the inflamed tissue.

A new point of view of inflammation is provided by these studies. Instead of re-

garding it as merely the result of injury produced by an irritant, we must consider it as a protective mechanism which plays an important and definite role in immunity.

L. C. H.

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#### DELAYED PAYMENTS FOR RABIES TREATMENTS

Those who have experienced difficulty in receiving payments for rabies treatments administered to indigents will want to read the memorandum on the subject appearing under the Bureau of Laboratories column in this number of the Journal. Perusal of the memorandum will result in an understanding of the difficulty.

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### Correspondence

*Mr. Editor:*

In reply to Dr. W. D. Partlow on Pellagra.

"The sudden appearance of pellagra in almost epidemic form."

In a general way I am not an authority on pellagra nor a statistician on depressions, but my information is that the Southern people before the war, during the war, and even after the war raised at home food stuffs for their general supplies in more or less abundance. Later cotton became more and more the king and there developed tenant farmers white and colored with more or less *absentee landlordism*. Land rents and supplies were paid for at the end of the year with cotton. These supplies were white meat, corn meal and molasses. The most shiftless tenants lived on these supplies and less food stuffs were raised at home. 1905, 1906 and 1907 were even bad corn years and during these years pellagra was at its worst. The doctors did not know how to manage it. Gradually health workers developed the idea of a better balanced ration, and living conditions have been better since 1910, and pellagra has lessened in the number of cases reported and in intensity of the disease when present.

My conclusions would be that the general knowledge of the necessity for balanced diet and the newer knowledge of the vitaminines in pellagra conditions; and that pellagra at present is rightly classed as a deficiency disease just as beriberi, rickets, etc.

"Geography and climate." The actinic rays of the Southern sun may have something to do with the development of pellagra where the conditions for it are ripe in a given case. The older doctors remember cases of vague digestive troubles and malaise in indoor workers where the diagnosis was not made until such a patient went on a fishing trip, and had an undue sun exposure; then in a few days there was a classical picture of pellagra.

John F. Jenkins, M. D., Birmingham

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### A WISE DECISION

C. A. THIGPEN, M. D.  
Montgomery

Life Counsellor of the Medical Association of the  
State of Alabama

I have been identified with organized medicine in this State continuously since 1888. I have seen its public health department grow and develop from the zero mark to the magnificent structure it is to-day.

It is my opinion that, for the best interests of public health work as now administered in this State, the Health Officer should be a member of the State Board of Censors. In support of these views, I am taking the liberty of reproducing below a resolution introduced before the State Medical Association at its annual session in 1915:

"Be it Resolved, by the Association, that it is the sense of this Association that Dr. Sanders resign either as member of the State Board of Censors, or State Health Officer; that it is the opinion of the Association that the Health Officer shall be the executive officer of the State Board and not its chairman".

The Board reported adversely on this resolution, giving as its reasons therefor the following analysis:

"This resolution affords the Board an opportunity of explaining some principles applying to the system of organization which no occasion has arisen hitherto for explaining.

"Dr. Sanders acts in three capacities:

1. As Chairman of the State Board of Censors.

2. As Chairman of the State Board of Medical Examiners.

3. As Chairman of the State Committee of Public Health, or as State Health Officer.

"In the first capacity, or as Chairman of the State Board of Censors, his duties are to aid the county societies in maintaining and perfecting organization; in interpreting constitutional principles as applying to their own organizations, or to their relations to the State Medical Association; in preparing information, such as that con-

tained in the Compend and other similar publications for the members of county medical societies; in answering all questions relating to organization, and in visiting county societies when conditions arise that require personal attention. In a word, the Chairman of the State Board of Censors is called upon to render a very considerable amount of service for which no remuneration is either provided or expected.

"Were any other member of the Board to occupy the position of Chairman all of this work would prove very onerous to him, in fact he would require the help of a clerk or stenographer to keep records, to conduct correspondence, etc., in addition to the time that would be required for travel.

"Inasmuch as the other members of the Board are either busy practitioners, or are otherwise engaged, it is evident that no one of them could undertake all of this work without remuneration. Further, unless the member occupying the position of Chairman of the Board of Censors was in close touch with the work in the other two fields, mentioned above, questions would arise not infrequently that would puzzle him no little and give more or less trouble in deciding.

"The second sphere in which the State Health Officer acts, as stated above, is as Chairman of the State Board of Examiners.

"This position demands a large amount of work, and of correspondence. Many details must be attended to in advance of each examination; when an examination is in progress all of the time of the Chairman is monopolized in supervising and managing the examination; when an examination has been completed much attention is required until the final results are announced, which period covers, from three to six weeks; when the results are announced records of the examination must be made, all of which requires much personal attention on the part of the Chairman of the Board.



"Were some other member of the Board of Examiners than the State Health Officer its Chairman he would need a stenographer and clerk and would be compelled to devote a considerable part of his time to supervising the work.

"For this work no remuneration is provided, except such dividend as may be declared among the members of the Board after all of the expenses of conducting an examination have been defrayed, which dividends would fall very far below remunerating him for his time and trouble.

"In the third capacity in which Dr. Sanders acts, namely, as State Health Officer, all know that the duties are both numerous and onerous. For this work remuneration is provided by the State, and under the system of organization which prevails the member of the Board who does this work and receives a salary therefor is expected to discharge the duties belonging to the other two spheres without remuneration. Being supplied with an office and assistants, he is in position to do the work with far less inconvenience than any other mem-

ber of the Board would be subjected to, and, as said, is expected to do the work in the three fields for the remuneration applying to one of the fields. Besides, the work in these three fields is so inter-dependent and closely related that one man is in a better position to do it harmoniously than three men would be.

"Again, were the work divided among two or three members of the Board and did they reside in different places, as might happen, the members of the Association would often be confused as to whom and where to address letters that appertain to one or another of these three fields. The consequence would be that letters would frequently be directed to the wrong official and therefore would be in danger of going astray in some way and therefore of not being replied to.

"Without further argument the Board recommends that this resolution be not adopted."

The Association ratified the report of the Board in this important matter and, in my opinion, acted wisely in doing so.

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## DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF ADMINISTRATION

J. N. Baker, M. D.  
State Health Officer in Charge

The State Health Officer wishes very much that a copy of a recent publication by the Commonwealth Fund entitled, "Child Health and the Community" by Courtenay Dinwiddie, might be placed in the hands of every physician practicing in this State. A few excerpts from this little book are given below, which admirably serve to show the attitude of the officials of this Fund towards the practicing profession, and also how necessary it is for any forward looking health program to have the undivided and sympathetic support of the profession.

In Alabama, because of the interest, responsibility and voice given by law to organized medicine in the direction and control of public health affairs, it is felt that less friction and misunderstanding creeps into the relation of these groups than likely occurs in any other state. The present

State Health Officer, who for many years trod the same path which every active physician is now treading, would like to feel that he has the confidence of the entire profession whose interests and welfare he shall ever strive to most zealously guard, in the effort to solve the many problems now confronting both the profession and health workers. To quote:

"In one particular, the Fund considers itself most fortunate. It enjoyed, at all times, a high degree of cooperation with the practicing medical profession. Mr. Dinwiddie has made some enlightening comments upon that fact. As a result of its experience, the Fund has not only learned to appreciate the point of view of the private physician, but has come to believe that the public health worker has sometimes expected more of him than, all things considered, is reasonable. Preventive medicine is only now beginning to be taught in our medical schools. Most of the physicians in prac-

tice in the United States, particularly in the smaller centers and in rural communities, have never had the opportunity to learn it. It is only comparatively recently that they have had opportunity to familiarize themselves with some of the principles of public health. It is a little too much to expect that the average private physician of twenty years in practice will welcome with open arms procedures and technics of which he has never had opportunity to acquire an understanding, and in which he does not know offhand, how to participate. Upon our medical schools must rest the responsibility—a great one—for training the future physician in the principles and technics of preventive medicine and of public health, and of making clear the indispensable service which the private physician must render to these activities if they are to be fully successful. Upon the public health worker rests the responsibility for showing a patient and cooperative attitude toward those from whom he expects such an attitude."

Later on the following summation is given:

"1. The public interest must be paramount. This is a general statement to which almost any one will agree until the ideas of others as to the public interest come into conflict with his own ideas as to his private interests.

2. The interest of any group that is contributing to the solution of a public problem must to that extent be considered a public interest.

3. Physicians constitute a body of citizens whose training has prepared them to render a service to public health for which there is no adequate substitute.

4. Physicians in private practice perform a service in the treatment of disease, whether as individuals or in fully organized groups, whether in private offices, clinics, hospitals, or homes, that is the accepted mode of treatment, in this country, for those able to pay for such service.

5. Physicians in private practice, because of their training, numbers and relationships to their clientele, constitute

the one group which is potentially most capable of applying the lessons of preventive medicine to the habits and circumstances of the individual. They are largely unprepared to render such service because their training and experience have been chiefly therapeutic.

6. The public is largely unready to demand or pay for such guidance in the application of the lessons of preventive medicine to personal problems.

7. An honest, consistent, and cooperative effort should be made by the organized medical profession, the health authorities, and private groups interested in public health to develop public demand for preventive services by private physicians whether practicing as individuals or in organized groups.

8. An inseparable corollary to this effort should be the conscientious preparation of physicians for such services, without which the attempt to build up satisfactory preventive services by private practitioners is doomed to failure.

9. Health conferences or preventive health center medical services conducted by the health department, especially for babies and younger children, are justified and desirable (a) as a means of creating a demand for such services, (b) as an agency of inaugurating proper standards for such services, (c) as a practice ground for physicians in the art of preventive medicine, and (d) as a supplement to the preventive services of private practitioners, so long as conscientious efforts to make such service adequate to the public needs have not been successful.

10. The paramount interest of the public must come to the fore especially in any question of the control of communicable disease. Leaving to the private practitioner as much latitude as possible in all discretionary matters of treatment, the health officer should take responsibility for promoting such immunizations as are accepted as part of the necessary protection of the community and must assume final authority for all control measures and for diagnosis in so far as that is necessary to insure prompt and accurate recognition of cases."



BUREAU OF LABORATORIES

L. C. Havens, M. D., Director

DELAYED PAYMENTS FOR RABIES TREATMENTS.

The State pays a small fee of \$10.00 to those physicians who administer rabies vaccine to persons unable to pay. The determination of indigency has been defined by the legislature and the law is strictly interpreted as those persons who have less than \$400.00 worth of taxable property.

There seems to be an impression that these payments are made by the State Board of Health. This is not the case. The vouchers are prepared and checked by the State Department of Health but are approved for payment by the State Auditor from the general fund. Prior to the straitened condition of the State Treasury these payments were made promptly each month. Recently however, not only have payments been delayed but the warrants, when issued, are often not immediately payable.

It is realized that this causes embarrassment and misunderstanding, but the circumstances are beyond the control of the State Board of Health. The most that can be done is to offer the assurance that these warrants will be paid as soon as the condition of the Treasury permits. In some instances, the banks have been willing to honor the warrants, but most banks will not accept them unless immediate payment is made by the State.

Numerous inquiries and complaints have been received by the State Board of Health from physicians who have not received the expected fees or who have found that their warrants were not honored by their banks. The State Health Officer has prepared the following reply:

Dear Doctor:

In reply to your recent inquiry regarding payment for administering rabies treatments to indigents the present condition of the State's finances is such that not only will payments be slow, but frequently also, the warrants when issued will not be immediately negotiable.

Since the payments are made, not out of the funds of the State Health Department, but directly by the State Treasurer, the circumstances are entirely beyond our control. We regret that there is nothing we can do to expedite these payments, and we can only suggest that the warrants, if not honored by your bank when issued,

be held until such time as the condition of the State Treasury permits their payment.

Very truly yours,  
J. N. Baker, M. D.  
State Health Officer.

It is hoped that the State's finances will soon become more fluid with resulting return to prompt payments, but in the meantime this explanation is offered for the delay, together with the assurance that the uncertainty, though regrettable, is unavoidable and beyond our control.

DISTRIBUTION OF RABIES VACCINE

On February 1, 1931, the State Laboratory began the distribution of rabies vaccine of its own manufacture. Up to the first of January, 1932, 2,667 treatments were administered, the cost of manufacture being in the neighborhood of \$3500.00, or slightly more than \$1.00 per treatment. This compares with the former average price, when the vaccine was purchased, of \$12.00 for each treatment, representing a total saving on this single item of \$27,475.00.

The State Treasurer paid physicians' fees for indigent cases to the amount of \$15,050.00, but was saved the price of the vaccine which, at \$9.00 per treatment, would have amounted to \$13,545.00. Since the treatment was distributed free to everyone, the saving to individual citizens was \$17,430.00.

The small cost of manufacturing represents rigid economy. The return of empty ampules after the treatment has been given effects a considerable saving, as this is the largest single cost. Another important factor in economical production is close estimation of demand, with consequent minimum of waste in unused treatments.

The following table summarizes the salient points.

*Rabies Vaccine Distribution*  
1931

Total treatments, 2667.	
Cost of manufacture.....	\$ 3,500.00
Indigent treatments, 1505.	
Saving to State at \$9.00.....	\$13,545.00
Non-indigent treatments, 1162.	
Saving to citizens at \$15.00.....	\$17,430.00
Payments to physicians for indigent fees .....	\$15,050.00
Total cost to State.....	\$18,550.00
Total cost to State if treatments had been purchased.....	\$46,025.00
Net saving.....	\$27,475.00

It is of interest that the State contributed over \$15,000.00 to the medical profession in 1931.

## BUREAU OF INSPECTION

C. A. Abele, Director

### CONTINUED PROGRESS IN MILK QUALITY CONTROL

Although 1931 was not marked by an intensive campaign of milk quality control, as were 1927 and 1929, a steady and healthy expansion of this activity has taken place during the year just closed.

In 1929 milk supplies were being graded in 33 communities; in 1930, in 44 communities; and in 1931, in 48 communities. This represents contact with about 500 dairy farmers and 24 milk plant operators, in 32 counties. With one exception (Ozark), the five communities in which milk grading was begun in 1931 were located in counties in which the State Board of Health Milk Control Regulations had been adopted prior to January 1, 1931. These Regulations were also adopted by the respective county boards of health in Dale County on April 1, 1931; in Geneva County on April 14; in Baldwin County on November 5; and in Conecuh County on November 6. The City of Uniontown also adopted the Milk Ordinance on May 19. Dairy inspections and milk sampling, preliminary to the announcement of milk grades, are now being conducted in Geneva, Evergreen, Fairhope, and Uniontown, as well as in the 48 communities above referred to.

Although milk control activities have been extended, this expansion has not taken place at the expense of the work already under way. Local dairy inspectors are being instructed in the details of their activities, and the effects of the instructions and suggestions given dairymen and milk plant operators are becoming apparent.

Too much significance is sometimes attached to bacteria counts of milk samples, because the bacteria count is not a specific index of milk safety. On the other hand, the bacteria count is a general index of the manner in which the milk has been produced, handled, and kept. Consequently, the proportionate increase in the number of

counts under 50,000 is of interest, in that it indicates a general improvement in dairy farm and milk plant methods.

Comparative data for 1929, 1930, and 1931 appear in the following table:

Distribution of Bacteria Counts

Year	Total Samples	50,000 or less		51,000 to 200,000		Over 200,000		Bacteria Count Rating
		No.	%	No.	%	No.	%	

Retail Raw Milk

1929	6046	4954	81.9	746	12.3	346	5.8	86.6
1930	6189	5177	83.6	648	10.5	364	5.9	87.8
1931	7188	6097	84.8	715	9.9	376	5.3	88.7

Pasteurized Milk

1929	566	502	88.7	46	8.1	18	3.2	91.4
1930	592	539	91.0	30	5.1	23	3.9	92.7
1931	860	799	92.9	42	4.9	19	2.2	94.5

A steady increase in the percentages of counts under 50,000 per cc., and of the bacteria count ratings, is depicted. A general milk supply of which approximately 85% of the raw milk counts and about 93% of the pasteurized milk counts, over a period of a whole year, are under 50,000 per cc. may be regarded as clean. The individual consumer, however, obtains milk from a particular supply, which may, momentarily, be better or vastly poorer in quality and safety than the general aggregate supply, but there is no means of judging its safety by its appearance or taste. Therefore, the prudent consumer will demand pasteurized milk.

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### ORAL HYGIENE ACTIVITIES

Contributed by C. B. Webster, D. D. S.

For a long time health officials and educators have felt the need of dental health education. As a step in this direction the Alabama State Board of Health in January, 1928, established a Division of Oral Hygiene. The division functions as a part of the Bureau of Preventable Diseases, and the staff consists of a director, who is a graduate dentist, and two dental hygienists.

In order to ascertain our problem, two county-wide dental surveys were made. The mouths of six thousand three hundred eighty-nine children were examined. Approximately ninety per cent of these were found to have dental defects with an



average of slightly over four defects per child. Some of the children had bad cases of pyorrhea and trench mouth, while as many as fifteen cavities were found in a single mouth. The impossibility of a purely reparative procedure on a state-wide basis was obvious. It was discovered that very few had received instruction in how to care for their mouths; that neglect and malnutrition were perhaps the principal causes of tooth and gum troubles. It was decided to begin the work with an educational program and to this end the aid and support of the Alabama Dental Association was solicited. Accordingly, a committee was appointed from that body to advise with the State Health Officer and Director concerning dental health for Alabama.

Up to the present time the limited personnel has permitted only educational work. This is carried on just as other public health activities are, that is, through the county health department. Local dentists are requested to assist in the mouth examination of school children; the parents are notified of existing conditions and urged to secure corrections. The work is followed up by the county health officer, nurse and teachers. In addition to the examination of the mouths and lectures to school children, the members of the staff are available for talks to parent-teacher associations, civic clubs, teacher institutes and other organizations. They also assist the superintendents and teachers in outlining their school dental health plans.

The function of the hygienists is primarily educational. These young ladies are sent into certain areas to carry on dental health education through the county health departments. They teach the children what we now understand to be the three essentials for mouth health, namely, diet, good home care, and proper dental attention.

While education is the main objective, many towns and cities have secured one hundred per cent dental corrections. For instance, during 1931 in the elementary schools of Enterprise, Florala, York, Geneva, Grady, Bellinger Hill in Montgomery, Masonic Home in Montgomery, and South Side in Dothan, every child had all necessary dental corrections completed. In Dothan, with an enrollment slightly in excess

of two thousand, only eighty-three pupils failed to obtain corrections. Troy was the banner city for the year, for every school boy and girl in elementary, high school and demonstration school at State Teacher's College, had all necessary dental work completed. This record has been achieved only a few times in the United States. Many other schools made commendable progress.

The summer months are spent in the various colleges of the State. Here teachers in training are offered the opportunity of a mouth examination and a lecture on the importance of mouth hygiene. It is interesting to note that in a certain college each student in the summer school of 1928 had an average of 6.1 dental defects; whereas, the group examined in the summer of 1931 had an average of only 2.8 defects, or a decrease of 3.3 per student. The average dental defect per student for all state summer schools in 1928 was 5.09; whereas, in 1931 the average was reduced to 3.1.

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## BUREAU OF VITAL STATISTICS

W. T. Fales, Director

Ethel Hawley, Acting Director

### OUTSTANDING FACTS CONCERNING REGISTRATION OF BIRTHS IN ALABAMA

1. The Bureau of Vital Statistics of the State Department of Health was established in 1908. Before that time births were supposed to be reported to the County Clerk. In a few counties these old records have been preserved, but in most counties their importance was not recognized and they have been lost.

2. A modern law for registration, under which the Bureau now operates, was established in 1919.

3. Alabama was admitted to the United States Registration Area for births in 1927. This means that, when the test was made by the Census Bureau, 90 per cent of the births were found to have been reported.

4. Birth reporting is still far from complete. With about half of the automobile license tags last year, a slip was sent out asking people if they were sure that the births of their children had been recorded and requesting those who were in doubt to fill out the blank with the necessary infor-

mation and return it to the Bureau of Vital Statistics, where the record would be looked up. 263 people returned the slips. In 111 or 42 per cent of these cases the birth was not on record. Of course, that does not mean that only 58 per cent of all births are reported, since only those people who were in doubt as to whether or not the birth of their child had been registered would return the slips, but the proportion of those not found is entirely too high.

5. 69 per cent of the births of the State are attended by physicians, 30 per cent by midwives, and the remaining 1 per cent by others.

6. Each month 800 or more requests come in to the Bureau of Vital Statistics for birth records. About 150 of these are for certified copies to be used for Government compensation, for passports, in the settlement of estates, and as legal evidence in court cases. The rest of the records are desired as proof of age for entrance into school and for employment.

7. The demand for certified copies alone has increased 153 per cent in the last six years and other requests have probably shown a like increase.

8. During the first nine months of last year 19 per cent of all birth certificates were filed a month or more after the birth occurred. Delayed filing of certificates causes many parents to be inconvenienced in getting certified copies of these records in important claims.

9. The prompt reporting of all births is of inestimable importance to the community as a whole, since infant and maternal mortality rates are based on the number of births recorded. The public health worker depends on these rates as a guide in his efforts to reduce the deaths of infants and mothers.

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## BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

### PLAN NEEDED FOR SAFEGUARDING THE LIVES OF CHILDBEARING WOMEN IN AMERICA

Plan? Plan? Who's got the Plan? This sounds like a modern version of a very old game, of which nobody under fif-

ty would think of admitting that he had ever heard. There are five-year plans, "Young" plans, master plans, and a wide variety of constructive programs, for accomplishing this or that purpose, destined to set the world certain specified notches nearer humanity's alleged goal. Among the numerous plans, one claims our belated attention; it is none other than a plan to make motherhood safe and to make a somewhat less hazardous vocation of being a new-born baby. In America the operation of this plan is scarcely more than two decades old, and its meaning and methods are little understood, outside of urban centers of population. Older civilizations have had a longer struggle with the problem, and can show more results in the reduction of maternal and infant deaths. A careful consideration of the various phases of the problem in America should lead to the inception of a plan, better suited to our widespread rural population of differing racial units.

#### *There Are Social Aspects*

The *why* of our plan has its roots in a problem as old as the human race. A large proportion of the female population between 15 and 45 years of age have always borne children, in accordance with Nature's plan for peopling the earth and maintaining its population, numerically. Like other natural laws the operation of this one has always been accompanied by considerable waste. For century upon century, the fecundity of the human race was so great that mothers and babies could die like flies without their loss being greatly felt and without becoming the occasion of public concern. Throughout ancient and medieval times even beyond the 18th century mothers and babies did die like flies under certain dangerous conditions.

Civilization moved very slowly toward a just evaluation of its maternal and infant life. History and tradition as well as the tenets of religion led to the acceptance of hazardous childbearing for women as a just retribution for the sins of our first parents.

Motherhood in the abstract has been memorialized in all ages but the ancient odium or stigma of sin has so firmly attached itself to the miracle of conception and birth that it persists as a sort of complex of humiliation.



*Midwifery Is As Old As Maternity*

The medieval attendant at birth—midwife—was a High Priestess of ignorance and superstition who held sway in the lying-in room for many centuries. She still holds sway in America over racial groups numbering many thousands.

*Civilization Has Advanced Through Scientific Discoveries*

The discoveries in the 19th century which led to the establishment of "modern surgery" and "preventive medicine" laid the foundation also for comparative safety for the childbearing woman and her infant. It was discovered that prevention of "child-bed fever" which is responsible for the heaviest toll upon the health and lives of mothers calls for the same identical "aseptic" precautions that have been found successful in preventing "blood-poisoning" after surgical operations. In the realms of modern surgery these discoveries have been promptly utilized, studied and perfected. In the realm of childbearing, ancient practices have been allowed to persist to a regrettable extent. Their replacement by modern practices awaits leadership on the part of scientific medicine coupled with the cooperation of a large body of enlightened public opinion supplemented by effective community organization and control of adequate medical and nursing service for every childbearing woman.

Civilization is still characteristically slow in recognizing and grasping the possibilities for its own advancement, through putting a higher value on maternal and infant life.

*I Will State The Problem*

Statistical records show that childbearing is still an important cause of death among women 15 to 45 years of age. Only tuberculosis kills more women of this age period in the United States than childbearing.

In Alabama and certain other states, causes connected with pregnancy and childbirth kill even more white women of childbearing age than are killed by tuberculosis or any other one cause.

This unfavorable position of Alabama in comparison with other states parallels the unfavorable position of the United States

in comparison with other countries in which authentic records are kept and published.

Concretely expressed, approximately seven mothers lose their lives for every 1000 babies born alive, in the United States; while for every 100 live babies four are born dead. The number of mothers whose health is permanently impaired by lack of proper medical attention cannot be estimated.

The bearing upon safety, for both mother and child, of adequate medical supervision during pregnancy has been the subject of teaching, preaching and propaganda for 20 years or more in this country; yet results in lowered maternal and infant death rates are almost negligible.

While the bearing upon the subsequent health of both mother and child of expert attendance at childbirth has been definitely recognized within the last decade by persons within and without the medical profession, mothers are still made invalids and infants are made imbeciles or brought to death within the first four weeks of life as a result of inexpert attendance at childbirth.

Obviously, the ancient Hebrew plaint "My people are destroyed for lack of knowledge" does not fit our present situation. There is some other lack. Perhaps the correlated problem of human inertia awaits a more enlightened application of available scientific knowledge for its solution. It is here that maternal and infant hygiene meets its most serious defeats and it is here that the whole subject emerges as a "modern health problem." "My people are destroyed for lack of *Applied* knowledge" is our modern version of this ancient plaint.

## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

CHLORINE IN PUBLIC WATER SUPPLY  
DISINFECTION

Contributed by

R. P. Farrell

Assistant Sanitary Engineer

Chlorine is widely used for disinfecting public water supplies. On well or spring supplies, where the water is of the proper primary quality, chlorine alone may be used as an additional safeguard to protect

the public from water borne diseases. On surface supplies it is used as an extra factor of safety after filtration.

Very small quantities of chlorine are required for complete disinfection of clear water, where oxidizable minerals and excess organic matter are not present. The amounts usually applied vary from 0.20 to 0.50 parts per million, or from 0.011 to 0.039 grains per gallon. Chlorine is very active and requires a relatively short period of time to completely disinfect clean water. The time required is considered by most sanitarians to be twenty minutes. Therefore, a test for residual chlorine, or that remaining after the reaction has taken place, is made twenty minutes after the chlorine has been applied. It has been determined that a residual amount of 0.15 parts per million or 0.009 grains per gallon of free chlorine should remain after the disinfecting reaction, as a safeguard. This amount should not cause tastes or odors. The residual chlorine gradually dissipates until only a trace may be found and this eventually disappears.

Very accurate means of treating water with liquid chlorine have been devised and with reasonable care on the part of the plant operator, complete disinfection may be had without any noticeable taste or odor. Further, the amounts used are too small to possibly be objectionable from a health standpoint. In order for a person to drink one grain of free chlorine, on the basis of the recommended treatment, it would be necessary to drink eighty-five gallons of water.

In summary, it might be said that chlorine is the most widely used means of disinfection of public water supplies. It is inexpensive, easy to use, safe, and provides a satisfactory means of disinfection where its use is suited.

The rapid increase in the use of chlorine as a disinfectant is not only due to the adaptability of the chemical itself but also to the fact that the dose can be so easily and quickly determined by the o-tolidin colorimetric test for the residual.

Chlorine is not a substitute for filtration, nor is it satisfactory for an unclean or heavily polluted water. Its application must be uniform and continuous, which limits its use in private well supplies.

## CURRENT STATISTICS

### State Department of Health

#### \*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1931 Nov.	1931 Dec.	Total Cases to Date This Year Last Year	
Typhoid .....	89	72	993	868
Malaria .....	175	87	2481	4744
Smallpox .....	2	2	295	187
Measles .....	26	73	9303	4193
Scarlet fever .....	247	207	1814	1660
Whooping cough .....	61	19	822	1770
Diphtheria .....	397	263	2197	1595
Tuberculosis .....	295	302	5066	3911
Pellagra .....	20	54	1120	623
Meningitis .....	11	6	226	138
Tetanus .....	6	2	48	47
Influenza .....	101	83	5986	3221
Dengue .....	0	0	2	13
Poliomyelitis .....	4	11	57	68
Pneumonia .....	175	202	3318	2810
Chickenpox .....	67	133	1756	2127
Mumps .....	22	28	1177	650
Encephalitis .....	1	3	46	35
Ophthalmia neonatorum .....	2	1	14	22
Typhus .....	13	11	80	67
Trachoma .....	0	0	2	16
Undulant fever .....	1	4	20	23
Tularemia .....	0	1	6	8
Rabies .....	0	0	2	4
Syphilis (private cases) .....	84	111	1568	1766
Chancroid (private cases) .....	3	0	67	89
Gonorrhea (private cases) .....	117	125	1655	1845

\*As reported by physicians and including deaths not reported as cases.

### PROVISIONAL MORTALITY STATISTICS

#### Alabama, November 1931

	Number of Deaths Registered Nov., 1931			Annual Rate per 100,000 Population		
	White	Black	Total	Nov. 1931	Nov. 1930	Nov. 1929
ALL CAUSES .....	1219	1095	2314	1049.3	1099.7	1064.5
Typhoid fever .....	14	9	23	10.4	5.5	7.9
Smallpox .....						
Measles .....	2	2	0.9			0.5
Scarlet fever .....	3	3	1.4	5.5	2.3	
Whooping cough .....	4	4	3.6	4.6	6.9	
Diphtheria .....	33	13	46	20.9	19.3	17.1
Influenza .....	18	29	47	21.3	27.5	21.3
Pneumonia, all forms .....	105	96	201	91.1	96.3	74.2
Poliomyelitis .....		1	1	0.4	1.4	1.4
Tetanus .....	1	4	5	2.3	0.9	0.5
Tuberculosis, all forms .....	73	109	182	82.5	70.2	72.8
Tuberculosis, pulmonary .....	63	99	162	73.5	62.4	65.4
Malaria .....	11	13	24	10.9	18.3	21.8
Cancer, all forms .....	82	37	119	54.0	57.8	51.9
Diabetes, mellitus .....	14	8	22	10.0	5.0	9.3
Pellagra .....	16	17	33	15.0	22.9	17.1
Cerebral hemorrhage, apoplexy .....	80	44	124	56.2	63.3	57.5
Diseases of heart .....	149	101	250	113.4	127.5	133.5
Diarrhea and enteritis:						
Under 2 years .....	21	10	31	14.1	22.0	12.5
2 years and over .....	10	3	13	5.9	8.7	1.3
Nephritis .....	105	84	189	85.7	92.2	98.3
Puerperal state, total .....	19	17	36	16.3	20.2	16.7
Puerperal septicemia .....	6	6	12	5.4	7.3	7.4
Congenital malformation .....	15	5	20	9.1	3.7	5.1
Congenital debility and other diseases of early infancy .....	75	46	121	54.9	50.9	57.0
Senility .....	12	21	33	15.0	22.0	20.9
Suicides .....	15		15	6.8	5.0	6.0
Homicides .....	10	37	47	21.3	17.0	15.3
Accidental burns .....	2	11	13	5.9	8.7	9.3
Accidental drownings .....	5	1	6	2.7	5.5	2.9
Accidental traumatism by firearms .....	11	14	25	11.3	5.5	7.4
Mine accidents .....		1	1	0.4	1.8	1.8
Railroad accidents .....	2	1	3	1.4	2.9	5.6
Automobile accidents .....	27	15	42	19.0	17.9	14.4
Other external causes .....	36	15	51	23.1	19.3	25.5
Other specified causes .....	187	149	336	152.4	154.5	159.0
Ill-defined and unknown causes .....	62	180	242	109.7	116.5	109.4



## County Society News

*(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)*

### BALDWIN COUNTY

J. Chason, Secretary

The regular monthly meeting of the Baldwin County Medical Society was held at Robertsdale, January 7, with members of the local unit of the Auxiliary as guests. Luncheon was served at the Greenleaf Cafe, Drs. Hail and Jordan being hosts. Dr. Chason submitted his annual report as County Health Officer which was approved with commendation on motion by Dr. C. G. Godard.

The following resolutions were adopted by the society:

#### A RESOLUTION

WHEREAS, The Baldwin County Medical Society and Board of Health recognize the value of immunization for the prevention of smallpox, diphtheria, and typhoid fever and the good work that has been done in this county in the past in preventing these diseases and limiting their spread; therefore be it

*Resolved*, That this County Medical Society go on record as favoring the immunization work of the County Health Unit and as agreeing to give full backing and support to the program; and be it further

*Resolved*, That a copy of this resolution be spread on the minutes of this society, and that a copy be furnished the State Health Officer, each county paper, and the physicians of the county.

#### A RESOLUTION

WHEREAS, it has been called to the attention of the Baldwin County Medical Society that the Board of Revenue of Baldwin County in its meeting on January 4 cut the appropriation for health work in the county thirty per cent, said cut to take effect on February 1 of this year, and

WHEREAS, such reduced appropriation will greatly cripple and retard the work of the County Health Unit, therefore be it

*Resolved*, That the Board of Revenue be requested and urged to restore immediately the amount cut from the appropriation for health work; and be it further

*Resolved*, That a copy of this resolution be furnished the State Health Officer, the Judge of Probate, and each member of the Board of Revenue.

### BARBOUR COUNTY

E. M. Moore, Secretary

At a buffet supper on January 12 at the home of Dr. James Reid, Clayton, the fol-

lowing officers of the society for 1932 were installed: President, Dr. Reid; Vice President, Dr. R. O. Norton, Louisville; and Secretary-Treasurer, Dr. E. M. Moore, Clayton.

Dr. J. W. Robertson, Clayton, has been elected a member of the Board of Censors to succeed himself.

### COFFEE COUNTY

W. A. Lewis, Secretary

The Coffee County Medical Society at its December meeting elected Dr. J. B. Woodall, New Brockton, President; Dr. C. P. Hayes, Elba, Vice President; and Dr. W. A. Lewis, Enterprise, Secretary-Treasurer, for 1932. Dr. Hayes was also elected a member of the Board of Censors.

### COLBERT COUNTY

John P. Long, Secretary

At a recent meeting of the Colbert County Medical Society, the following resolution was adopted:

*Resolved*, That inasmuch as one of our neighboring county societies has seen fit to disapprove of the substitution of the Alabama Medical Association Journal for the Transactions formerly published, the Colbert County Medical Society desires to take issue because it believes the change is a change for the better, for the following named reasons:

(a) The essays are published monthly and can be read as they are published, instead of waiting for the whole volume.

(b) Essays of merit may be published in the Journal after approval by the Committee of Publication, regardless of the fact that they were not read at the annual convention in April.

(c) The Editorial Section is a forward step, as also are the Association Forum and County Society News, to say nothing of the reports from the State Board of Health.

The Colbert County Medical Society would respectfully recommend that the publication of the Journal be continued, and that an inexpensive binder be devised for the Journal and the roll of the County Societies and furnished to those members who wish to purchase same.

### COVINGTON COUNTY

F. H. Boyd, Secretary

Dr. H. W. Waters, Opp, has been elected President, Dr. G. L. Gresham, Andalusia, Vice President, and Dr. F. H. Boyd, Secretary-Treasurer of the society to serve during 1932.

## CULLMAN COUNTY

M. S. Whiteside, Secretary

The Cullman County Medical Society, in deploring the passing of Dr. Gottlob Hartung, for fifty years a practitioner of his profession at Cullman, voiced its high appreciation of him as a citizen and a physician in a recent article appearing in a local paper. "In the loss of Dr. Hartung", said the article, "no one outside his immediate family can hardly miss his influence and example more than the Cullman County Medical Society.

"His services to us and his high code of ethics, which he always practiced, will be an inspiration to us for better in years to come.

"Perhaps no other man in the profession has been so unselfishly devoted to the high principles of the medical profession, and certainly no one was more willing to lend a helping hand to suffering humanity. Nature endowed him with a warm heart and a sagacity that knew no obstacles.

"Dr. Hartung was unanimously elected president of the Cullman County Medical Society in 1895 and served in that capacity until five years ago when he voluntarily retired. The society elected a successor to him but elected him President Emeritus for life.

"He was always very liberal in his views and lived a life that will pay us all to emulate in patience, fortitude and charity. In fact, to know him was to love and respect him, and while we all mourn for the loss of this great man, we thank God that such an exemplary doctor existed for our emulation."

## FRANKLIN COUNTY

N. P. Underwood, Secretary

The Franklin County Medical Society at its January 5 meeting elected for 1932, Dr. W. J. Clark, Russellville, President; Dr. Z. L. Weatherford, Red Bay, Vice President; and Dr. N. P. Underwood, Russellville, Secretary-Treasurer. Dr. O. O. Underwood, Phil Campbell, was elected a member of the Board of Censors.

## HOUSTON COUNTY

F. G. Granger, Secretary

Drs. Frank Boland and Murdock Equen, Atlanta, addressed the society at its regular meeting on January 8. The meeting

was a dinner affair at the Houston Hotel. Dr. Boland used as his subject "Surgery of the Tuberculous Chest; Dr. Equen, "Removal of Foreign Bodies From the Esophagus and Trachea." Motion pictures were shown in connection with the latter paper.

## JACKSON COUNTY

M. H. Lynch, Secretary

The Integrating Unit of the State Department of Health spent the week of January 11 with the staff of the local health unit. An interesting and constructive program was carried out.

Through an error on the part of the Secretary of the Association, which he regrets, a paper on Rocky Mountain Spotted Fever, read before the Jackson County Medical Society on December 15 was credited in January news items to Dr. Rayford Hodges. The paper was prepared and presented by Dr. Hugh Boyd, Scottsboro.

## MADISON COUNTY

J. D. Holliman, Secretary

At the regular meeting of the Madison County Medical Society January 12 the following were elected officers for 1932: President, W. G. McCown, Huntsville; Vice President, W. C. Hatchett, Huntsville; Secretary-Treasurer, J. D. Holliman, Huntsville.

Dr. Carey Walker, recently operated on, is very much improved.

## MARSHALL COUNTY

Hugh Awtrey, Secretary

Dr. W. E. Noel, Boaz, has been elected President, Dr. J. M. Crawford, Arab, Vice President, and Dr. Hugh Awtrey, Guntersville, Secretary-Treasurer of the society for 1932. Dr. T. E. Martin, Guntersville, has been elected a member of the Board of Censors.

At the January 13 meeting of the society held at the Guntersville Hotel, Dr. L. B. Nicholson of Gadsden read a paper on "The More Common Upper Respiratory Conditions". Drs. Graves, Gipson and McCorkle of Gadsden, were also guests of the society.

Dr. W. T. Hinds, of Arab, died December 21, 1931, of pulmonary hemorrhage.

Dr. W. T. Gillespie, of Boaz, died January 13, 1932, following an operation for intestinal obstruction.



## MONTGOMERY COUNTY

J. L. Bowman, Secretary

Dr. Samuel Goodwin Gant of New York City addressed the society, Tuesday night, January 12, on common diseases of the rectum.

## WILCOX COUNTY

E. L. McIntosh, Secretary

Dr. Walter Fudge, Lamison, Dr. Robert Dixon, Alberta, and Dr. E. L. McIntosh, Camden, have been elected President, Vice President, and Secretary-Treasurer, respectively, of the society for 1932.

## WINSTON COUNTY

W. E. Howell, Secretary

Dr. T. M. Blake, Double Springs, has been elected President, Dr. Wash M. Godsey, Haleyville, Vice President, and Dr. W. E. Howell, Haleyville, Secretary-Treasurer of the society for 1932. The Board of Censors has for its personnel Dr. J. Sam Snoddy, Haleyville, Chairman; C. A. Olivet, Haleyville, T. M. Blake, Double Springs, W. R. Bonds, Double Springs, and M. L. Stephens, Haleyville.

## Book Abstracts and Reviews

**A Doctor of the 1870's and 80's.** By William Allen Pusey, Sometime President of the American Medical Association and of the American Dermatological Association. Charles C. Thomas, publisher. Springfield, Ill. 1932. 153 pages. Illustrated. \$3.00.

The author, believing that in popular fiction the country doctor is described more as a figure of romance than as a living man and wishing to make a permanent record of the life and work of the rural physician, has chosen as subject his father, Doctor Robert B. Pusey of Elizabethtown, Kentucky, and has written a biography characterized by familiarity with and sympathy for its subject. He describes the man, his appearance and his character, his home, his horses, his mode of travel, the country in which he practiced, the people among whom he practiced and the nature of the work he did. By numerous little anecdotes, he paints a very vivid picture of his sire.

In recent years, much has been written and more has been said about the vanishing family physician. His knowledge has been contrasted unfavorably with that of the specialist. The physician, himself, realizes, perhaps better than anyone else, that even this age of specialization can not put an end to the family physician for there is something besides cold science in the relation between doctor and patient; yet it will, perhaps, strengthen his faith in himself to read this appreciation of the life and work of one of his

colleagues. In addition, this is a good book to put in the hands of the layman.

C. K. W.

**Varicose Veins with Special Reference to the Injection Treatment.** By H. O. McPheeters, Director of the Varicose Vein and Ulcer Clinic, Minneapolis General Hospital; Attending Physician, New Asbury, Fairview, and Northwestern Hospitals, Minneapolis, Minnesota. F. A. Davis Company, publishers. Philadelphia. 1931. Third edition. 285 pages. Illustrated. \$4.00.

The inadequacy of the surgical excision of varicose veins, and the consequent long period of hospitalization, large scars, and frequent post-operative recurrence were responsible for the development of a method of treatment which after a fair trial has proved to possess many advantages over the older operative method. The newer method is based upon the principle that certain chemicals when injected into a varicose vein causes an inflammation of the intima and produces a firm clot which does not separate and produce emboli. With this method, the disability is practically nil, the contraindications are few, and the percentage of recurrences is about a third as great as in operated cases. These advantages make the injection and sclerosing treatment the most ideal one now available.

This monograph by McPheeters contains excellent chapters on the anatomy of the veins of the legs, the etiology of varicose veins, the Trendelenburg test, the history of the treatment of varicose veins, the operative treatment and its results, the details of the injection treatment including the post-injection care, the results of injection, the complications, the causes of failure, and the treatment of the common complications—varicose ulcer, varicose eczema, and elephantiasis.

The third edition contains a chapter on the causes of failure in the injection treatment. There is a new chapter on the pathology of varicose veins before and after injection, as seen in biopsy specimens. The demonstration of the direction of flow of blood in varicose veins by lipiodol injection and x-ray is well described and illustrated. A complete and up-to-date bibliography is appended. The book is concise, exhaustive, well written, profusely illustrated and, in all ways, practical.

C. K. W.

**The Foundations of Medical History.** By Sir D'Arcy Power, K. B. E., F. R. C. S. (Engl). Consulting Surgeon to St. Bartholomew's Hospital, Vice-President and Honorary Librarian of the Royal College of Surgeons of England, Formerly President of the Bibliographical Society. The Williams and Wilkins Company, publishers, Baltimore. 1931. 178 pages. Cloth \$3.00.

This little volume contains six lectures delivered by Sir D'Arcy Power at the Institute of the History of Medicine of the Johns Hopkins Hospital University. The first lecture deals with the history of St. Bartholomew's Hospital, the oldest hospital in London, founded in 1123, and with many of the physicians and surgeons who were connected with this institution—Percival Potts, John Abernathy, Sir Paget, and others. The second lecture deals with the history of eating, and traces the habits of cooking and eating from prehistoric time to the present. The third tells how to write a medical biography, whether

it be a death notice for the papers, a sketch for "Who's Who" or a statement of fact and accomplishment for a directory. The fourth deals with iconography—a study of the "portraiture of individuals by painting, drawings, engravings, etchings, and medals". The physicians of Birmingham have been acquainted with this subject through a recent presentation of silhouettes. The fifth deals with the subject of book collecting and a study of the circumstances under which the book was written and published, the changes made in later editions, the types of binding, the presence of names or name-plates in the volume, and other pertinent points of interest to ardent collectors. The last lecture is on the subject of "Aristotle's Masterpiece", a volume first printed at Venice in 1563, which has passed through at least sixty-six editions. The question and answer system is used. Such amusing questions as the following are quoted: "Why is honey sweet to all men but to such as have jaundice?" "Why do men sneeze?" and "Why are studious and learned men soonest bald?" Altogether this collection of lectures are delightful reading for those interested in the cultural phase of medicine.

C. K. W.

## *Truth About Medicines*

Blood Disturbances and Thrombogenesis from Clinical Intravenous Injections of Dextrose Solutions.—In intravenous medication, more attention is often devoted to the details of technic of the injection than to the changes which may occur in the blood and in important physiologic functions following such administration. More important than such technical accessories is the important fact that agents, drugs or solutions so injected act as foreign agents in the blood stream. Recently reported results of intravenous dextrose solutions are timely, and worthy of the attention of all physicians who practice such injections. The most constant change which was reported was an acceleration of blood coagulation. Other changes were increases in glycolysis and of lactic acid, also variations in mineral content, disturbed albumin-globulin ratio with increase in thrombocytes associated with a decrease in their electrical charges, and agglutination of platelets. The reported results merit serious thought. Reports of deaths from intravenous dextrose injections have been published. In contrast to the experimental and clinical evidence cited is the commercial propaganda disseminated through the organs of proprietary manu-

facturers who advocate and exploit all sorts of substances and solutions for intravenous injection. It is unfortunate that credulous and uncritical physicians accept these claims and thoughtlessly jeopardize the lives of their patients. (Jour. A. M. A., December 12, 1931, p. 1800)

The Geneva Convention of 1931.—The international conference on the limitation of the manufacture of narcotic drugs, held in Geneva, Switzerland, during the past summer, was guided not only by altruistic motives but also by practical objectives. The treaty resulting from the conference should be a beneficial influence in helping to solve the medicosocial problem of drug addiction, in simplifying the administration of laws and regulations governing the distribution and uses of these drugs, and in reducing the quantity of contraband arriving at American ports. The convention is designed to control further the international traffic and distribution of narcotic drugs and to limit the manufacture of all dangerous and potentially dangerous narcotic drugs to medicinal and scientific requirements. (Jour. A. M. A., December 12, 1931, p. 1801)

Panaceas for the Common Cold.—With the first blasts of wintry air a considerable number of our citizenry begin to develop the running of the nose, the lacrimation, the depression, the fever and the other symptoms commonly associated with the onset of a cold. From the teachings of the hygienists, the sanitarians, the public health writers and physicians, most of the public have learned that the symptoms can be abated and the cold controlled in the majority of instances if the patient will go promptly to bed and stay there for at least three days. However, few follow this advice. The promoters of various types of devices and foods associated with health maintenance have been prompt to take advantage of every possibility for exploiting their materials in connection with the universality of the common cold. Vitamin D has been vaunted for this purpose in the form of ultraviolet rays, cod liver oil, cod liver oil concentrates, irradiated foods and what-not, notwithstanding the fact that there is not the slightest scientific evidence to indicate that excess of vitamin D will prevent a cold or



have any effect in curing it. Because of reports that in mice an excess of vitamin A favorably affects the tissues of the respiratory tract, the National Dairy Company through one of its subsidiaries advocates the use of milk as a means of preventing colds, for this claim there is not adequate evidence. (Jour. A. M. A., December 12, 1931, p. 1802)

**Insulin—A Protein.**—The early investigations of insulin gave indications that it is either a protein or a protein-like substance or something closely connected with proteins in nature. Recent investigations make it extremely probable that insulin is a well defined protein and that the physiologic activity of this hormone is a property of the insulin molecule itself or of some special group within it. (Jour. A. M. A., December 12, 1931. p. 1803)

**The Intravenous Use of Barbitol Compounds.**—The Council on Pharmacy and Chemistry reports that more than seven years have elapsed since the introduction of the intravenous use of barbitals, sufficient time to justify an assay of the possible value of the method. Since the chief object of the intravenous use has seemed to be the possible employment of barbitals used in this way to produce anesthesia, the Council reports on the possible changes following intravenous injection, a comparison of the experimental and clinical results, and attempts to determine if the intravenous use has peculiar advantages over other methods of administration, with equal safety. The Council points out that there is no doubt that the characteristic hypnotic action of the barbitals can be obtained by oral administration; that since the barbitals act essentially as hypnotics, and not as anesthetics, it is reasonable to entertain doubts about radical departures from the orthodox usage of these drugs, but the new methods of using and new uses for well known drugs merit attention; and that, moreover, the intravenous use of barbitals has been widely exploited by some manufacturers and serious attention has been given to the subject experimentally and clinically. From an exhaustive review of the literature it is concluded that any advantages that may exist in the choice of barbitals as aids in anesthesia, or as sedatives, analgesics or hypnotics, can be

easily procured by giving them by mouth, with the further advantage of avoiding the necessity of the small operation and aseptic technic for intravenous injection and the unnecessary disturbances and complications of such injections in general, and that about the only argument in favor of the intravenous route would be an occasional rapid action in an emergency, and that hence their intravenous use should be limited for the present to conditions in which oral administration is not possible or when a very prompt action is imperative. (Jour. A. M. A., December 19, 1931, p. 1886)

**Oysters, A Pleasant Type of Therapy.**—The announcement three years ago that copper is effective in supplementing iron in the cure of anemia produced by an exclusive milk diet in the rat promptly aroused interest. The inferences drawn by others than the investigators themselves has led to confusion and mistaken advice. There has been no warrant whatever in applying the observations without reservation to some of the unusual conditions of the blood, such as pernicious anemia in man. At the moment there is some debate whether copper stands alone in the capacity to promote the function of the iron in hemoglobin and blood cell formation. Other elements, such as manganese and germanium, are clamoring for equal recognition. Meanwhile all sorts of new products containing both iron and copper are foisted not only on the ignorant public but also on an uncertain medical profession. The chief objection to such unproved therapy is the sense of false security which leads to the neglect of other modes of therapy that may be far more effective. Recent investigations have shown oysters to be capable of curing the nutritional anemia of milk-fed rats. The studies indicate that the inorganic elements present in the oyster are responsible for its hemoglobin regenerating capacity and that the antianemic potency of the oyster can be accounted for on the basis of its content of the three elements iron, copper and manganese. (Jour. A. M. A., December 26, p. 1970)

The Sixty-Fifth Consecutive Annual Session of the Association will convene in Mobile, April 19-22, 1932.

# THE JOURNAL

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## THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS\*

FRANK K. BOLAND, M. D., Sc. D.  
Atlanta, Ga.

Gratifying progress has been made during the past thirty years in diminishing the mortality and morbidity of pulmonary tuberculosis. While the aid of surgery has been invoked for a long time in treating the disease as manifested in other organs, only recently has such therapy been employed in combating tuberculosis of the lungs.

The feature of the treatment which has contributed more than anything else to the successful medical management of pulmonary tuberculosis is rest. By producing more complete and permanent rest of the lungs, treatment by surgical collapse is furnishing valuable assistance in controlling the malady, whereby the lives of many sufferers are being saved and the lives of others are being prolonged and made more comfortable.

Rest is induced through surgical collapse by one of four principal methods: (1) artificial pneumothorax; (2) extrapleural pneumolysis; (3) phrenicectomy; and (4) extrapleural thoracoplasty. Artificial pneumothorax is the oldest, simplest and safest means of collapsing the lung, and should always be tried before attempting more radical surgery. The efficacy of the procedure usually depends upon the absence of pleural adhesions. The existence of adhesions interferes with satisfactory collapse when air is introduced into the pleural cavity. Such adhesions may be divided by cauterization through a thoracoscope, as suggested by Jacobaeus, and as

practiced so successfully in this country by Matson, of Portland, Oregon. The risk of this step, however, appears so great that at the present time it is not generally advocated.

It may be stated as a rule that so long as artificial pneumothorax gives satisfactory results, a change in treatment is not advisable. The method belongs almost exclusively to the medical attendant, but should always be practiced under strict aseptic precautions. The second method of collapse, extrapleural pneumolysis, has been used by only a limited number of surgeons, and appears to have but few indications.

Phrenicectomy and extrapleural thoracoplasty are the agents of collapse which enjoy the widest application. Other names have been attached to the operation for excision of a portion of the phrenic nerve to effect paralysis of the diaphragm, but none seems better than phrenicectomy. The success of the procedure is dependent upon the extent of the nerve and its accessory filaments which can be removed. Simple section causes only temporary paralysis of the muscle, since sooner or later the nerve will regenerate if no portion of it is excised. Freeing the nerve has been done for the relief of intractable hiccough, and section is recommended in the treatment of bronchiectasis.

*Phrenicectomy.* Phrenicectomy has been described so often in recent literature that every step of the operation will not be given. A few points deserve special mention. A vertical incision, parallel with the posterior border of the sternomastoid muscle, gives the best exposure; a horizontal incision, parallel with the clavicle, leaves a less conspicuous scar. The position of the patient on the table is important. The

\*Read at a meeting of the Houston County Medical Society, Dothan, January 8, 1932.



head should be turned only slightly away from the nerve which is to be exposed. If the head is turned too far, the scalenus anticus muscle may be rotated on itself, and the structures on its lateral side brought into view. Such structures will be branches of the brachial plexus. The purpose is to

nerve around the point of a small curved hemostat. If a long section of the nerve is being delivered, the patient may complain that his whole chest is coming out, a sensation probably due to the pull on the diaphragm. The pain rarely is so great as to require treatment.

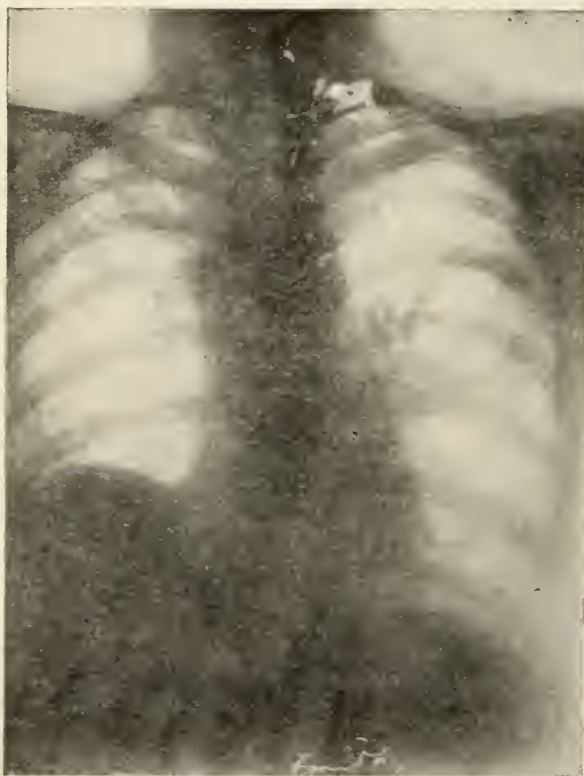


Fig. 1. Showing pulmonary tuberculosis of left lung with large cavity in upper lobe. Note position of left diaphragm. Cause of elevation of right diaphragm not known.



Fig. 2. Showing elevation of left diaphragm after excision of 20 cm. of phrenic nerve, one month after Fig. 1 was taken. Note reduced size of cavity as compared with Fig. 1.

expose the anterior surface of the muscle, upon which the phrenic nerve usually is found without difficulty. It is a nerve of considerable size, generally lying under a pad of fat, somewhat imbedded in the muscle, and running diagonally downward and inward.

The operation needs only a local anesthetic, and when the operator comes to identify the nerve he is glad the patient is awake, because as soon as the nerve is picked up the patient complains of pain in the corresponding shoulder. If it is a branch of the brachial plexus, the pain usually is referred lower down the arm. The nerve should be well anesthetized before being cut, since failure to do this sometimes causes shock. Evulsion is carried out slowly and carefully, by wrapping the

In our experience, unless as much as 8 centimeters of the nerve is excised, the results of the operation are disappointing. The removal of at least this much of the nerve is necessary in order to realize any appreciable rise in the level of the diaphragm. The degree of collapse of the lung depends upon the height to which the diaphragm is elevated. Perhaps a more important factor in the outcome of the operation than the length of nerve evulsed is the removal of accessory branches. This is a matter beyond the control of the operator. When the nerve breaks the operation is over. There is no opportunity to excise more of it, or to be sure that all accessory branches are gone. These things account for the variable results in phrenicectomy. In a few cases brilliant results have been

reported. Such cases must have had complete paralysis of the corresponding half of the diaphragm. Davies quotes Pruder as reporting a case in which the diaphragm rose as high as the second rib.

Should blood ooze up along the nerve during evulsion it probably means that a vein is caught between the main nerve and a branch. The subclavian vein has been torn in this manner. Two other factors appear to affect the results of the operation. Some authorities deny that diaphragmatic adhesions may prevent rise of the diaphragm after evulsion of the nerve, but our experience indicates that such may be the case. Before performing the operation, failure was predicted in several of our cases on account of the diaphragmatic adhesions, and the predictions proved to be correct. Another more common cause of poor results in phrenicectomy is the presence in the lung of cavities with dense, unyielding walls, which will not collapse following considerable rise of the diaphragm.

*Case Report.* Roentgenograms show the marked rise of the diaphragm following the excision of 20 centimeters of the phrenic nerve. Marked diminution in the diameter of a thick-walled cavity also is demonstrated. The patient had been sick two years when she was operated upon July 11, 1930. Every symptom has been helped. One of the first signs of improvement noticed in these cases is the increased ease with which sputum is raised. Such improvement was present immediately in this patient; the sputum became negative for tubercle bacilli, cough was less, fever disappeared, the weight increased, and in every way the patient felt and looked better.

Altogether, she appears to have derived the maximum amount of benefit possible from phrenicectomy at the time it was performed. Other factors being equal, the degree of improvement following successful phrenicectomy depends upon the pathology present when the operation is done, and the extent of pathology bears a direct ratio to the length of time the disease has existed. If this young woman could have had such a phrenic nerve evulsion a year or eighteen months earlier, with the resultant rise of the diaphragm and lung collapse, the benefit would have been far greater. Indeed, it is possible to conceive of a cure

following very early phrenicectomy in certain cases, and such cures have been reported.

The maximum height of elevation of the diaphragm was attained in this case in two months; in other cases the diaphragm may continue to rise for a longer time. This patient is still under strict sanatorium



Fig. 3. The same case as Fig. 1, showing disappearance of cavity three months after phrenicectomy. The patient's general condition has correspondingly improved.

treatment, and is getting better. Certainly the prognosis is improved after phrenicectomy. She may become a candidate for extrapleural thoracoplasty. Preparation for this operation is one of the chief indications for phrenicectomy.

*Extrapleural Thoracoplasty.* As this high-sounding name implies, it means a plastic operation upon the chest outside of the pleural cavity. Perhaps a simpler expression may be forthcoming. The object of the procedure is to collapse the chest wall to such an extent as to compress the diseased lung completely and permanently, and thus destroy all suppurating spaces, put the lung at rest, and reduce it to a non-functioning fibrous mass. Naturally, an operation of such magnitude would not be performed upon a lung that had not already ceased to function for the good of the patient, but is acting only as a warehouse of infection to consummate in premature death. Again, the operation is absolutely contraindicated unless the opposite lung is practically free of the disease. To find the



opposite lung perfectly normal cannot be expected.

The operation is plastic in that sufficiently long segments of the upper eleven ribs are removed to reduce materially the capacity of the corresponding thoracic cavity. It is remarkable how little deformity

of the patients, on account of nervousness, are not good subjects for local anesthesia, and gas or ether has to be added. One of our patients did well under novocain, preceded by sodium amytal. With the patient in the prone or semiprone position, the incision is begun just below the middle of the clavicle and is extended downward midway between the spinous processes and the edge of the scapula. For the first-stage operation the incision stops at the level of the sixth or seventh rib; for the second stage the incision is continued down to the level of the tenth rib. The ribs are exposed rapidly by cutting through the muscles, which form a much thicker mass in the upper half of the wound than in the lower half. There are so many bleeding points to be caught in the upper half that the use of the electrocautery coagulating knife expedites the work materially.



Fig. 4. Showing appearance of chest after completing thoracoplasty. The left lung is practically gone.

results in adults. In children, in whom thoracoplasty rarely is indicated, deformity may be pronounced. The ribs are removed subperiosteally, and the whole operation must be done extrapleurally. Opening the pleura is dangerous on account of the likelihood of inducing empyema.

The success of extrapleural thoracoplasty depends upon performing the right operation upon the right patient at the right time. By the right operation is meant especially not doing too much at one sitting. While probably more complete collapse is obtained by finishing the operation at one sitting, few tuberculous patients are prepared to withstand such an extensive procedure, and the mortality is much higher than when the program is carried out in two or more stages.

While one would prefer to use local anesthesia exclusively in these cases, many

of the patients, if the disease is more advanced in the upper half of the lung, the operation should begin above, whereas, if the lower half is more diseased, the operation should begin below. Eventualities may prevent more than the first stage ever being done, so that it is well to make sure of collapsing the worst part of the affected organ.

We have found it convenient first to excise about 3 inches of the third rib, and 2 inches of the second rib, after which it becomes easier to expose and remove about an inch of the deeply imbedded first rib. This may conclude the first sitting of the operation, or usually it is safe to excise also 4 or 5 inches of the fourth and fifth ribs. The number of sittings depends upon the reaction of the patient. No chances must be taken. It is better to quit voluntarily than to be forced to do so. The most important part of the rib to remove is the

portion nearest the transverse process of the vertebra. Excision should extend as closely as possible to this point. By this means the greatest collapse is obtained. Removal of long rib sections in the mid-portion of the bone will produce but little collapse. Not more than ten days should elapse between sittings. Five or 6 inches of the sixth, seventh and eighth ribs are excised, and then shorter sections through the eleventh.

While thoracoplasty does not present much technical difficulty to the experienced surgeon, it is by all means a major operation, and should not be undertaken without most positive indications. The right patient and the right time to operate must be decided by the internist. Many victims of the disease, learning of the success of surgical treatment, beg for operations, but the advisability of extrapleural thoracoplasty must be determined by the physician and not by the patient. While thorough study of the case by physical signs cannot be neglected, the value of roentgenology must be recognized, especially in the consideration of performing thoracoplasty. The roentgenogram must demonstrate fibrous and scar-tissue formation as shown by the mediastinum and its contents being drawn toward the affected side. This condition is well manifested by the displaced position of the trachea.

Such fixation of the mediastinum usually insures against collapse of the heart and mediastinal flutter when the lung is collapsed. An already weakened heart, thus affected, is the commonest cause of early death in this operation. Shock, hemorrhage and infection, though they may be alarming, rarely are responsible for a fatal result. Pneumonia and other pulmonary complications seldom cause mortality.

*Case Reports.* However, the roentgen picture of mediastinal fixation does not always promise a favorable outcome. The film of another case shows well-advanced unilateral pulmonary tuberculosis with the trachea well drawn toward the side of the disease. The patient had been sick three and a half years, and recently had had serious hemorrhages. Artificial pneumothorax was attempted without success, and it was thought that phrenicectomy would do but little good on account of the diaphragmatic adhesions. With the approval of

medical men in attendance, extrapleural thoracoplasty was performed in two stages, ten days apart, with satisfactory immediate postoperative results. The patient appeared to be reacting normally from the operations until the fourth day after the second stage, when his heart suddenly be-



Fig. 5 Showing scar after thoracoplasty. Note lack of deformity. This patient was completely cured by the operation.

came weak and rapid, and he died a few hours later. There was no evidence of pulmonary complications. Unfortunately no autopsy was obtained.

On the other hand, the roentgenogram of another fairly unilateral case shows the trachea in the midline. The patient had been sick four years, and artificial pneumothorax was a failure. Nine centimeters of the phrenic nerve were excised without producing much elevation of the diaphragm. In August, 1930, extrapleural thoracoplasty was performed in two stages, and apparently the patient is now on the way to comparative recovery. Her anemia has disappeared, and all symptoms have improved, although occasionally there are bacilli in the sputum.

Another film shows the chest of a woman who had been a tuberculous subject for



seven years. The trachea is drawn toward the affected side. Artificial pneumothorax proved ineffective and phrenicectomy produced little result. Thoracoplasty was done in two stages in 1927, and apparently the patient is now well. She has grown fat; occasionally she has some cough and sputum, but she has no fever, and all examinations for tubercle bacilli are negative. She is now able to earn a living. Roentgenograms show the chest completely collapsed, and there is absolutely no deformity of the spine or back.

While the treatment of pulmonary tuberculosis by surgical collapse still leaves much to be desired, the results have been encouraging, and should stimulate further efforts in the selection of the right cases for operation, and in the improvement of the technic. The patient should always be under the watchful care of competent phthisiologists, before and after surgical treatment, and ill-advised operating by overzealous surgeons should be discouraged. It is believed that the greatest advance in the therapy of pulmonary tuberculosis will be brought about by the use of surgical collapse earlier in the disease.

## AGRANULOCYTOSIS\*

### REPORT OF CASE

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*History*.—Although the manifestations of this condition vary somewhat in the experience of different observers, there are enough symptoms and signs constantly present to establish it as a clinical entity. It is a comparatively rare disease, too, only a little more than one hundred cases having been reported in this country until a short time ago. No doubt this was the disease described by different writers, at various intervals, since the year 1902, because many of these cases showed the clinical signs and characteristic blood picture peculiar to it. However it was not until 1922 that the disease was given the name agranulocytosis and described by Schultz. It occurs in all ages, but most often in middle life. It is seen, too, in both sexes but about

twice as often in the female as in the male. Although the disease is highly fatal, the mortality rate standing at possibly 85 per cent, the latest reports of cases treated are slightly more encouraging.

In Schultz's cases he observed the following signs: leukopenia, especially characterized by a very low percentage or total absence of polymorphonuclear leucocytes; a necrosing angina, little or no anemia, and a lack of the hemorrhagic tendency which is seen in so many blood diseases. Since this description was given, variations have been noted. Severe anemias are seen, as the one here reported, in agranulocytosis. Hemorrhages may occur into the skin of rapidly fatal cases; and some have been observed without the angina but showing the other clinical signs.

This condition may develop suddenly while in perfect health, may be preceded by a period of malaise or may follow some protracted malady. It occurs quite frequently in combination with a septicemia. It usually runs a rapid course, ending fatally within seven to fourteen days, but it may last over a period of weeks or months terminating in recovery or death. Recurrences are rather often observed.

*Etiology*.—The etiology of agranulocytosis is unknown as shown by the many causative agents suggested. There have been isolated from the throat and blood stream numerous organisms among which we find streptococci, staphylococci, Vincent's organisms, *B. pyocyaneus* and others. Only a very small percentage of them have shown positive blood cultures. Without a single organism constantly present, the blame cannot be laid upon any one of them. Similar blood pictures follow the administration of antisyphilitic treatment, especially the arsenicals and certain other drugs as those of the benzene group. But when these drugs are discontinued the blood quickly returns to normal showing the power of regeneration has not been destroyed. This is not true of typical agranulocytosis. This condition is very closely associated with a sepsis and most observers believe that some overwhelming infection is responsible for the clinical manifestations. The question is whether the sepsis is the cause or result of the injured bone marrow. Drs. Roberts and Kracke are of the opinion that the primary lesion

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is in the red bone marrow, paralyzing the production of the granulocytes, and that the septicemia and angina are secondary conditions. The polymorphonuclear leucocytes are considered as belonging to the immunizing agents and, of course, when they are destroyed the body resistance is lowered allowing ever present microorganisms to gain an entrance.

*Pathology:*—Drs. Roberts and Kracke had an unusually good opportunity to study a case which they had under observation during the first attack, after recovery and throughout the second attack. They made daily observations upon the patient's condition and blood counts during this period of weeks and found that the blood returned to a normal white count after the first attack, even rising to a high leucocytosis during the stage of sepsis and then returned to about normal during the interval of health. Then four or five days before any clinical symptoms of the second attack occurred, a leucopenia reappeared with an absence of polymorphonuclear leucocytes. While the blood showed absolutely no polymorphonuclears for about two days the patient said she felt unusually good and showed no signs of pathology. So it does seem that the original trouble is in the bone marrow, the blood picture and clinical symptoms being resultant.

These two men offer the following reasons for believing that the primary lesion is in the red bone marrow: At autopsy the bone marrow still shows the formation of red blood cells, while myelocytes and granulocytes are absent or nearly so. The marrow is badly degenerated, sometimes being even in liquid form; next, during the height of the disease, marrow was removed from the sternum of these patients and showed the same absence of granulocytes that was found at necropsy; and, too, there was found a complete absence of granulocytes (polymorphonuclears) from the blood stream two days before any clinical symptoms appeared.

Postmortem findings are not especially helpful as nothing peculiar to this condition is found in the liver and spleen. They may or may not be enlarged. The same is true of the lymph glands. There may be necrotic ulcers throughout the entire digestive tract and at times on the mucous membrane of the vagina and cervix. These le-

sions are peculiar in that they do not show the usual inflammatory reaction, there being a noticeable scarcity of polymorphonuclear leucocytes. The bone marrow shows the changes above described, this being possibly one of the most constant findings. The lungs may or may not show evidence of consolidation.

*Differential Diagnosis:*—In diagnosing agranulocytosis it is to be differentiated from septicemia, aplastic anemia, aleukemic leukemia and pernicious anemia. In septicemia there is usually a point of entry for the infection, abscesses are often seen, bacteria can more often be grown from the blood stream and they show a different blood picture.

In aplastic anemia there is often the history of administration of arsenicals, the blood platelets are markedly reduced and the blood does not show evidence of new red cells being formed. Also there is more of a tendency toward hemorrhage.

In the leukemias there is a more uniform glandular enlargement, more often an enlarged liver and spleen, and more of a tendency to a leucocytosis. There is more of a hemorrhagic tendency, too.

Pernicious anemia usually runs a different course, shows a much more marked anemia, abnormal red blood cells and a high color index. Blood platelets are also reduced, whereas in agranulocytosis they are not usually changed.

#### CASE REPORT

The case under consideration was a white female, aged 23. The family history showed nothing of interest. Her past history was that of a pneumonia, gastric ulcer and pharyngeal diphtheria in 1930, but nothing else of significance. She was first seen on Nov. 28 when she gave the following history: Three days previous, while in perfect health, a head cold developed, but had largely cleared up when visited. The chief complaint then was a severe soreness and marked pain of the gums. There was fever, general aching, restlessness, but no soreness of the throat. The gums were extremely red and tender. The throat was negative, neither was there any enlargement of the cervical glands. The patient was not seen again for four days when she still showed fever, complained of painful gums and mouth, general aching and rest-



lessness. The gums showed not only redness but ulcerations. There were ulcerations, with necrotic looking bases, on cheeks and underneath the tongue. The breath had a foul odor, the patient looked very sick and was thought to have a general Vincent's infection due to the physical signs and the laboratory findings of the two characteristic organisms in the mouth lesions. The liver and spleen were never palpable. The only enlargement of glands found was in the inguinal region. The throat never became involved. The lungs remained clear until the tenth day when the right base showed evidence of consolidation, together with a marked pleural friction rub. One day later the left lower lobe showed the same signs. The heart showed a systolic murmur, most marked at apex, from the time of the first visit. The skin never showed any evidence of hemorrhage, but did show an icterus late in the disease. Vomiting was frequent throughout the course of the attack. Diarrhea, with involuntary stools, developed late. Four to five days before death she complained of painful micturition and it was found that the anal region and vaginal mucosa showed similar ulcerations to those revealed in the mouth. She was admitted to the hospital on the twelfth day of the disease, showing very marked prostration, delirium at times and an exaggeration of all her symptoms. Her blood at that time showed the following: red cells, 2,856,000; hemoglobin, 50 per cent; and a white count of 2,150 with no polymorphonuclears present. There were only sixty-five white cells found on the slide, 37 of which were small lymphocytes and 28 abnormal cells. The next day the white cells dropped below 2,000. The blood showed a negative Wassermann reaction. The abdomen now was moderately distended, involuntary stools became more frequent, the pulse rate and respirations rose rapidly and death ensued on the thirteenth day of illness. The temperature ran from 102 to 105  $\frac{2}{5}$ , the pulse rate from 120 to 140 and respirations from 20 to 40. A catheterized specimen of urine showed only a trace of albumin and a few casts (hyaline and granular).

*Treatment:*—This patient received one intravenous administration of neosalvarsan comparatively early. The ulcers were treated as usual and the customary sup-

portive and symptomatic treatment seemed to have no effect upon the course of the disease. Late in her illness she was given a transfusion of 500 cc. of citrated blood. Numerous remedies have been suggested among which are these: transfusion of blood from a person who has recovered from the disease; foreign proteins; sterile turpentine abscesses; leucocyte extract; neosalvarsan; typhoid bacilli, and nucleotide. The best results seem to have come from frequent transfusions and x-ray treatments of the long bones.

In conclusion we can say that nothing new has been suggested in this paper, but it is hoped that we may be made to realize more fully the importance of blood examinations when faced with the clinical picture of sore throat, fever, ulcers of the mouth and general aching.

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### GLYCOSURIA\*

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Since sugar in the urine is a frequent finding, the finding sometimes associated with diseases carrying a bad prognosis unless properly handled, and at other times of no importance, I thought it might be of interest to review the different conditions causing glycosuria and if possible draw conclusions as to how to differentiate the types.

In the first place one must be aware of the existence of pentosuria, lactosuria, and fructosuria, either with or independent of a glycosuria. Pentosuria is uncommon and is usually familial. It has been noted after ingestion of large quantities of pentose-rich substances, such as cherries, plums, and fruit juices, and is said to be fairly constant in habitual use of morphine. It sometimes accompanies glycosuria in diabetes. The pentoses reduce copper strongly, but do not ferment with yeast. Lactose is sometimes found in the urine of nursing women and in that of women who have recently miscarried. It is of interest chiefly because it may be mistaken for glucose. It reduces copper but does not ferment with yeast. The blood sugar is never increased

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in this condition. Levulose is seldom present in the urine except in association with dextrose, and has about the same significance. According to von Noordem, its appearance in diabetes indicates an advanced case. Its name is derived from the fact that it rotates polarized light to the left. Galactosuria and maltosuria are also rare conditions. The blood sugar content is not increased in these two conditions. They are without pathologic significance.

In 1886, von Mering showed that the administration of the glucoside, phloridzin, to animals was followed by the appearance of dextrose in the urine. The amount of urinary sugar excreted may be far in excess of that contained in the glucoside; therefore, it is evident that most, if not all, of the sugar in the urine is derived from the poisoned animal and not from the drug. The glycosuria which follows the administration of phloridzin is not associated with hyperglycemia. Indeed, the concentration of glucose in the blood is often lowered. In diabetes the urinary sugar is secreted by the glomeruli; in phloridzin poisoning by the tubules. The essential disturbance of carbohydrate metabolism produced by the administration of phloridzin appears to be a drainage of blood sugar out through the kidneys.

In 1901, Blum discovered that the intravenous or subcutaneous injection of adrenal extract into various animals was followed by glycosuria, and, in 1902, Richard showed that adrenalin was responsible for this action. This knowledge of the action of adrenalin has been utilized in the treatment of insulin shock. Adrenalin glycosuria is usually associated with a hyperglycemia. The hyperglycemia following adrenalin injection is due to a rapid conversion of the glycogen of the body into blood sugar. After repeated injections of adrenalin, glycosuria fails to appear even though the blood sugar is increased to 250 mg. per 100 cc. of blood. Apparently the kidneys have become less permeable to blood sugar than they are normally.

Pottenger calls attention to the interrelationship between the sympathetics and suprarenal secretion in the production of glycosuria; so-called "nervous diabetes" following such conditions as grief, fright and other forms of sudden and severe emotions. Cannon has produced glycosuria in

cats by emotional stimulation, and McLeod has shown that while stimulation of the splanchnics will produce glycosuria when the suprarenals are intact it will not when these glands are removed. Folin and Denis made some interesting observations on a number of boys and girls before and after examinations. Before the examinations all had normal urines. After the examinations 17 per cent of the girls and 18 per cent of the boys showed glycosuria. The amounts of sugar found, however, were always small.

Glycosuria is a frequent finding in the early stage of acromegaly. It is not clear whether it occurs in the presence of an intact insular portion of the pancreas and independent of it or is to be interpreted as a secondary disturbance of the internally secreting Islands of Langerhans. True diabetes mellitus is an occasional complication and it is possible that in such cases no association exists between the acromegalic process and the diabetes mellitus. The latter disease is so common that it might readily occur as an accidental unrelated complication with almost any malady. Brochart found glycosuria in 40 per cent of 176 cases of acromegaly. It occurs mostly in the early stages of acromegaly and is explained as a hyperactivity of the anterior lobe of the hypophysis.

Glycosuria has been noted during the active stage of hyperpituitarism very much as in acromegaly. This vanishes as the excessive function wanes, and indeed is transferred into an increased carbohydrate tolerance coincident with the gradual decrease of pituitary function. Whether this glycosuria is occasioned by the increased function of the anterior pituitary alone or is in some way connected with a decreased activity of the Islands of Langerhans remains a mystery.

Several authors have noted transitory, spontaneous and alimentary glycosuria in cases of Graves' disease, though it must be stated in this connection that true diabetes mellitus sometimes complicates exophthalmic goitre. Some authorities are inclined to regard such glycosuria as thyrogenic and are influenced to form such conclusions by the fact that the glycosuria has appeared after the inception of and during the development of the exophthalmic goitre syndrome, and has later disappeared



with the amelioration of the thyroid disease, either through the influence of x-ray radiation of the thyroid or following partial removal of the gland, and without respect to diabetic management. Moreover, the glycosuria in some of these patients, after cure of the exophthalmic goitre, does not again appear in spite of the ingestion of excessive amounts of carbohydrates. In this connection it would be interesting to note that glycosuria has appeared, after the taking of large amounts of thyroid extract, to disappear after the extract was discontinued. Therefore it would not seem unreasonable in such instances to attribute the glycosuria to an excess and perhaps to a perverted thyroid secretion. Bothby did not find, however, the glucose tolerance test to be of use in the diagnosis of exophthalmic goitre; the curves obtained had no consistent characteristics.

One must emphasize the necessity of differentiating renal diabetes from true diabetes mellitus and anomalous conditions when the quantity of sugar excreted bears no relation to the quantity ingested, and where the circumstance of glycosuria has no serious prognostic import. It is accounted for by a kidney threshold point below the level of the normal blood sugar. Paullin summarizes the essential points for a diagnosis of "renal glycosuria" as follows: (1) a normal blood sugar content of between 70 and 100 mg. per 100 cc. of blood; (2) the constant presence of sugar in the urine known to be glucose; (3) little, if any change in the glycosuria on increase or decrease in the carbohydrate content of the diet; and (4) an absence of the usual signs of diabetes mellitus.

There is another type of glycosuria associated with pregnancy known as the glycosuria of pregnancy produced by a lowering of the renal threshold caused in some way by the pregnancy as such conditions always disappear when the pregnancy is terminated. This type of urinary sugar like that produced by renal diabetes has no serious consequences.

The puncture of a particular spot in the floor of the fourth ventricle in the brain has been known to produce glycosuria since the time honored classical experiment of Claud Bernard. Injuries to the head sometimes affect this point, producing glycosuria. The sugar in the urine in these

cases of itself has no significance, its presence not indicating the seriousness but the point of injury in the brain. The puncture of the floor of the fourth ventricle just above this point will produce albuminuria but no glycosuria.

Glycosuria is rarely found in cases of acute, subacute, or even chronic pancreatitis accompanied by pain, such as come under the observation of the surgeon, and when found usually disappears in a few days.

The glucose taken in the diet, together with that formed during the digestion of other carbohydrates, is for the most part taken in the portal blood to the liver. Here a part of the excess of glucose is converted into glycogen; apparently another part is rapidly removed from the blood to other tissues. Under special circumstances, however, the glucose absorbed from the alimentary tract is not removed from the circulating blood with sufficient speed to prevent a general hyperglycemia which is sufficient to cause an elimination of glucose through the kidneys. Since the human liver has a storage capacity of 150 to 200 grams of glycogen, it is evident that it is able to arrest and fix any ordinary amount of glucose coming from the alimentary tract, provided it is permitted to discharge some of its contents between meals, and provided the sugar from the digestive tract is not absorbed too rapidly. When this type of mechanism is responsible for glucose in the urine, it is spoken of as alimentary glycosuria. It was formerly believed that while normal individuals might show alimentary glycosuria after taking excessive quantities of sugar, they could take unlimited quantities of starch by mouth without the appearance of sugar in the urine. Occasionally, however, a rapid digestion of large quantities of starch may lead to alimentary glycosuria. The maximum amount of sugar that may be taken by mouth without the appearance of glycosuria is usually spoken of as the alimentary tolerance or assimilation capacity for glucose. This tolerance varies with different individuals, and with the same individual under different conditions. In normal individuals 100 grams of glucose may be taken by mouth in one dose without the appearance of glycosuria and larger amounts up to and above 300 grams have

been tolerated. The tolerance varies with the age of the individual. Elderly persons are believed to have a somewhat larger glucose tolerance than those in youth and middle life. Alimentary glycosuria, then, depends on three variable factors which make its interpretation difficult. The three factors are: (1) the rapidity of the absorption from the intestinal tract; (2) the ability on the part of the body to remove the excess of glucose from the circulating blood; and (3) the threshold limit at which the kidneys begin to excrete the excess in the urine.

The normal average kidney begins to secrete sugar in the urine when the glucose in the circulating blood reaches between 160 and 170 mg. per 100 cc. of blood. However the threshold for glucose is probably never the same. Young diabetics usually have a renal threshold for sugar around 140 mg. per 100 cc. of blood. Since hypoglycemia symptoms appear when the blood sugar reaches between 70 and 60 mg. per 100 cc. of blood, the margin of safety in these cases is small, making it difficult to keep the urine sugar free and at the same time keep away from alarming if not dangerous hypoglycemia reactions. Elderly diabetics usually have a renal threshold above normal, and when their diabetes is complicated by arteriosclerosis and hypertension as is usually the case, a renal tolerance for glucose of between 250 and 300 mg. is not uncommon. Oftentimes when the blood sugar has remained high over a long period of time the patient becomes so accustomed to an excessive blood sugar that he will have an insulin reaction when his blood sugar is above that considered normal for the average person. I recently saw such a patient in the City Hospital. His blood sugar taken during an insulin reaction was 190 mg. per 100 cc. of blood.

Much interest attaches itself to the relationship between alimentary glycosuria on the one hand and incipient diabetes on the other. If glycosuria follows the administration of 100 grams of glucose by mouth, does it indicate that the individual has or is likely to develop diabetes? In general it may be said that the likelihood is not great, for experience has shown that alimentary glycosuria is not regularly followed by the development of diabetes mellitus. Nevertheless a small number of patients showing

alimentary glycosuria subsequently develop diabetes. One should therefore be suspicious of such cases, and especially so if considerable amounts of glucose, 2 per cent or over, are eliminated during the test; if it is positive in conditions other than those known to be often associated with alimentary glycosuria, such as alcoholism, hyperthyroidism and pregnancy, and if it is positive when repeated at intervals of some months.

The glucose tolerance test is probably the most accurate method for estimating the tolerance of an individual for glucose. This test should be done on all suspected individuals. A normal individual when given 1.75 grams of glucose by mouth per kilogram of body weight on a fasting stomach shows a blood sugar curve as follows: the maximum increase usually occurs at the end of one-half hour and is never more than 30 to 50 per cent above the fasting level. At the end of two hours the fasting level should be regained. In diabetes the curve is equally characteristic; the maximum increase is greater and the fasting level is not regained for several hours. If the fasting level has not been regained in three hours a diagnosis of diabetes is justified.

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## VARIED MANIFESTATIONS OF ALLERGY\*

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The term "allergy" refers to that hypersensitiveness or abnormal susceptibility to some foreign protein which is the basic cause of asthma and hay-fever. The hypersensitiveness or allergic state may exist indefinitely without producing symptoms, but when an individual so sensitized comes in contact with the specific protein to which he is sensitive, a reaction occurs which may be manifested in one of several ways. The resulting symptoms vary with the nature of the protein, and with the route of entrance of that protein into the body.

The following is a list of proteins which may cause allergic reactions:

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1. Wind-borne pollens
2. Animal emanations, such as hair and feathers
3. Occupational dusts, such as wheat flour, linseed and boxwood
4. Orris root, a constituent of most face powders
5. Foods, especially the three important foods, wheat, eggs, and milk
6. Drugs
7. House dust
8. Bacteria
9. Miscellaneous — cottonseed, kapok, silk and fungi

Entrance of the protein into the body may take place by inhalation, by ingestion, by injection, by absorption through the skin, or by absorption from a focus of infection.

The response which results from contact of a sensitized individual to the foreign protein to which he is sensitive manifests itself by a spasm of smooth muscle or by increased capillary permeability. The muscle spasm may affect the bronchioles, the intestinal tract, or the bladder. The capillary changes may affect the skin or mucous membranes resulting in congestion, edema, or capillary hemorrhage.

*Reactions to the Injection of Foreign Serum:*—An intravenous injection of a first dose of foreign serum will often cause, particularly in those already suffering from asthma, a rapid pulse, a fall in blood pressure, dyspnea of asthmatic type, giant urticaria, and edema. This condition is known as anaphylactic shock. Several deaths have been reported in the literature.

The injection of a second dose of serum intravenously into an individual previously sensitized by an injection of the same serum will result in swelling of the lymph nodes, urticaria or erythema, edema of the face or ankles, fever, and pain in the joints. This condition is known as serum sickness. It occurs as a rule seven to ten days after the injection of serum, but the interval is lessened and the severity increased if the second injection of serum is made one to three months after the first. The severity is also proportional to the amount of serum injected. Adrenalin gives temporary relief in this condition. Calcium may be of some value.

*Urticaria* is more often unrelated to the injection of a foreign serum. Rackeman estimates that 20 per cent of the cases of urticaria are allergic in origin while Balyeat puts the figure at 70 per cent. Probably, when our methods of determining an allergic state are more exact, the figure will be still higher. A seasonal urticaria may result from timothy or ragweed pollen. Urticaria may result from an over-dosage of pollen during the process of desensitization. Frequently it is the result of eating certain foods—shell fish, strawberries, meats, cereals, fruits, vegetables, and milk products. When honey causes urticaria, it is the clover that is responsible. Emetin, insulin, iodine, phenolphthalein, quinine, and aspirin may cause this condition.

The usual urticarial eruption is a small hive and is known as nettle rash. At times, the hive is as big as the palm of one's hand. The disease is then called giant urticaria. Angioneurotic edema is a closely allied condition in which a localized area of edema recurs at intervals at the same site. An eyelid, lip, or a cheek may become suddenly and unexpectedly swollen and almost as suddenly return to normal. This lesion does not itch. Balyeat was able to determine the causative protein in 40 per cent of his cases of angioneurotic edema.

Urticaria, angioneurotic edema, and erythema multiforme are often accompanied by purpura, arthritis, and abdominal symptoms—colic, nausea, vomiting, and diarrhea. The condition is generally designated Henoch's purpura. Osler first suggested that these symptoms might have an allergic basis, probably because of the close resemblance to serum sickness. Alexander and Eyerman have recently reported a series of six cases of Henoch's purpura in which symptoms were relieved upon the withdrawal of certain foods from the diet and reappeared upon taking these foods again. In none of the cases were skin tests positive, but the causative protein was determined by means of elimination diets. The foods responsible for these symptoms were milk, wheat, eggs, beans, pork, onions, plums, and strawberries.

*Eczema or Dermatitis*—This condition is characterized by a redness and thickening of the skin accompanied by papules, vesicles, pustules, burning and itching. Poi-

son ivy causes a typical dermatitis. The effect is not that of an irritant only for there are many people who can touch the plant without any ill effect whereas sensitive persons get the eruption when they come even near the plant. Sumac and primrose may cause a similar eruption. Certain drugs may cause a typical eczema—novocain, cocain, ipecac, quinine. The pollen of ragweed or timothy may cause a dermatitis which appears either in the fall or in the summer. Rarer causes are silk, rayon, ursol (a fur dye), soap, lanolin, orris root, egg white (used in shampoo), flaxseed (used in hair tonic), linen, camel hair, glue (in books, furniture and violins), grape juice, ichthyol (in shaving cream), glycerine, leather (in hat bands), varnish and resin. In testing patients for sensitization to these substances, the scratch and intradermal tests are less valuable than the so-called contact test. This is performed by applying the protein to the skin, covering with a piece of rubberdam which is held in place for twenty-four hours at the end of which time a dermatitis appears at the site of those proteins to which the individual is sensitive. The following are interesting examples of allergic dermatitis. Dermatitis sometimes results from contact with insect powder due to the pyrethrum in it. "Week-end dermatitis" is a dermatitis of the face and hands which appears within twenty-four hours after handling a rotogravure section of a newspaper. It is due to the brown dye, parared, of the rotogravure ink. A type of dermatitis followed by brownish pigmentation and known as "Berlock Dermatitis" is due to *eau de cologne* and excessive perspiration or exposure to the sun. Because of the sites of application of the perfume, the rash appears on the breasts, behind the ear, on the tongue, and on the neck.

In children, about half of the cases of dermatitis or eczema are due to foods to which the child is sensitive. Milk, wheat, and eggs are the chief offenders, but many other foods may be responsible. Determination of the food causing the symptoms and restriction of that food will result in cure of the eczema.

Hay-fever is characterized by congestion of the eyes with itching and lachrymation, congestion of the nasal mucous membrane, obstruction of the nares, run-

ning of the nose, itching of the nose, upper lip and, sometimes, the palate, paroxysms of sneezing, and occasionally cough. When the symptoms occur at the same time each year, the disease is known as seasonal hay-fever, which may be divided roughly into a spring type, a summer type, and a fall type. In general it may be stated that the spring cases are due to the pollen of trees, the pecan being the chief cause around Montgomery, that the summer cases are due to grasses, and the fall cases to weeds, chiefly ragweed. I have presented in a previous paper\* a list of the plants which may cause hay-fever in Alabama with the dates of pollination of each. Such a pollen calendar is of great help in determining the pollen responsible for a case of seasonal hay-fever.

Patients whose symptoms, perhaps less severe, persist throughout the entire year are said to have perennial hay-fever or vasomotor rhinitis. The chief offending proteins are animal emanations such as hair and feathers, orris root, and house dust. Food causes a fairly large number of cases. Milk, eggs, and cereals rank foremost, but many other varieties of foods may also be responsible. Of the drugs which may cause vasomotor rhinitis, may be mentioned aspirin, arsphenamine, formaldehyde, iodides, bromides, morphin, codein, cocain, novocain, atropin, and quinin. Among the rarer causes may be mentioned straw, wood-dust, perfume, smoke, honey, and insect bites.

In determining the pollen responsible for a case of seasonal hay-fever, the ordinary scratch test proves entirely satisfactory. In perennial hay-fever, the scratch test is less satisfactory and it is better to use the intradermal test if the scratch test proves negative. In the case of suspected foods, both of these tests may be negative even though the food is actually the cause of symptoms. For the determination of food sensitization, it is therefore wise to use another diagnostic method, the so-called elimination diets. These were described by Rowe and are to be found in his book published by Lea & Febiger or in his article in the *Journal of the American Medical Association*.† He allows his patients one cereal (not wheat), one or two meats, three vege-

\*Ala. M. J. 1:15 (July) 1931.

†J. A. M. A. 91:1623 (Nov. 24) 1928.



tables, three fruits, and sugar, salt, syrup, and some kind of cooking oil. He has outlined three such diets and given directions for preparing palatable foods without using milk, eggs, or wheat. The foods contained in these lists are those to which sensitization rarely occurs. Balanced meals containing ample of carbohydrate, protein, fat, mineral salts, and vitamins can be made from these lists. A diet is adhered to for a period of seven to ten days and if symptoms are relieved, other foods are added, one or two at a time, until the addition of some food produces symptoms. This food is then permanently eliminated from the patient's diet.

*Asthma* is probably more frequently encountered by the physician than any other allergic manifestation. The severity of the symptoms and the seriousness of the complications warrant a serious study of the means of affording relief. Detailed study of the causes of asthma would not be warranted if it were not for the fact that a determination of the protein or proteins responsible for the attacks is essential to successful treatment, for having determined the protein responsible for the attack, we may either remove the patient from contact with the protein or if this is not feasible, we may desensitize the patient just as we would in hay-fever.

By means of skin tests properly performed and interpreted, we may expect to determine the causative protein in about sixty per cent of the cases. About 85 per cent of these will react to one of the following twenty-two proteins: house dust, ragweed, goat hair, chicken feathers, goose feathers, duck feathers, wheat dust, cat hair, horse hair, rabbit hair, grass pollen, tobacco, pyrethrum, buckwheat, flaxseed, cotton seed, silk, and fish glue. It should be mentioned that in performing these tests, the pollens, animal hairs, and orris should be used in dilute solution. House dust, goat hair, feathers, tobacco and the foods should be used in concentrated solution and if the dermal tests are negative, intradermal tests should be used.

In children the causative protein can be determined in a somewhat larger percentage of cases, 75 per cent being the usual estimate. Ninety-eight per cent of these will react to one of the following inhalants: rabbit hair, house dust, duck feathers,

horse hair, cat hair, goose feathers, goat hair, dog hair, orris root, wool, camel hair, chicken feathers, cattle hair, ragweed pollen and grass pollen. Foods cause the other 2 per cent, egg and fish being the most important.

It may seem discouraging to learn that only 60 per cent of adults with asthma and 75 per cent of children are likely to have the causative protein found. It should be encouraging to learn that a larger percentage of causes can be determined if the examiner becomes familiar with some of the rarer causes of the disease and with the many obscure forms in which some of the proteins may be disguised.

Bacteria should be mentioned first. Scratch tests are not satisfactory. Intradermal reactions are of great value. Positive reactions are of two types. One appears within ten to twenty minutes and resembles the wheal seen in other tests. The late reaction appears in about twelve hours and reaches its height on the second day. Its appearance is very much like that of a Schick test. Various strains of staphylococci, streptococci, and colon bacilli are the most important organisms so far as asthma production is concerned.

Reactions to house dust are quite frequently encountered. This material is not a specific protein but is a mixture of many things. It may contain feathers from pillows, dog hair from a pet dog, orris root from milady's face powder, wool from a blanket, goat hair from the mohair chair, camel hair from an oriental rug, and what not. Unfortunately we have not yet devised a method of analyzing the constituents of house dust, but in cases where the patient reacts to house dust, desensitization with this material gives good results. Both in testing and in treatment it is better to use a dust from the patient's own house rather than a commercial product. The preparation of these autogenous house dusts is a fairly simple procedure.

Certain birds may be responsible for cases of asthma. Canary feathers, sparrow feathers and parrot feathers have caused a few cases. Laboratory workers may be exposed to guinea pig hair or mouse hair. Bee stings may cause asthma. The dust from bed bugs and from the wings of sand flies may cause asthma. Cotton seed is found in certain cooking oils, in fertili-

zer, in chicken feed, in lard substitutes, and in cheap mattresses. Kapok is a substitute for cotton or feathers and is found in pillows and mattresses. Castor oil bean dust is discharged from factories in which castor oil is made. The dried bean is used for fertilizer. Cuttle fish bone is fed to canaries, is used in razor-strop dressings, in metal polishes, in bird food, and in engraving. Boxwood is used by lens grinders. Pyrethrum is a constituent of insect powder and is found in Black Flag and Flit. Fish glue is used in furniture making and book binding. Any fur may cause asthma. Rabbit hair appears on the market under several different names—sable, ermine, fox, chinchilla, muskrat, or Hudson Bay seal. Druggists may have asthma from the inhalation of aspirin, ipecac, or lycopodium. Among the foods may be mentioned almonds, apples, bananas, peaches, pears, coffee, milk, eggs, wheat, barley, mutton, oats, peas, peanuts, potato, radish, lettuce, and many others. Eggs appear in prepared mayonnaise, in macaroni, ice cream and cake. Garlic, a rare cause of asthma, is found in sausage. Sweet potato may be present in the glue on a postage stamp. I have in my own records a rare case of a woman sensitive to the fish bone in fertilizer.

From this long list of rarer causes of asthma, the examiner must choose the ones he will use for skin testing. A detailed history of contact and a thorough investigation into the habits and surroundings of the patient will show which proteins are possible causes of his asthma. These only should be used in testing. Scratch tests should be done first, both for the sake of speed and in order to prevent any untoward reaction. In case of foods, elimination diets are more satisfactory than skin tests.

By migraine, I refer to a particular variety of headache characterized by suddenness of onset, great severity, accompanied by a sense of pressure in the temples, and sometimes by vomiting and visual disturbances. The symptoms have been explained in the past on a basis of pituitary engorgement often compensating for a gonad insufficiency. The results of treatment have not been very striking. Balyeat has recently reported a series of fifty-five cases of allergy, 85 per cent of whom gave

an allergic history. Food sensitization is the basis for most of the cases, wheat, milk, eggs, fish, lettuce, beans and nuts being the most frequent causes. Skin tests are of some value in determining the food responsible for the symptoms, but the elimination diet is more satisfactory and more conclusive. I have under my care a patient who was relieved of her attacks when tuna fish, lamb, eggs, and chocolate were removed from her diet. Another who suffered also from vasomotor rhinitis was relieved of her migraine and her nasal symptoms when eggs, milk, cabbage, and turnips were removed from her diet. In Balyeat's series of cases, marked to complete relief was obtained by the elimination of certain foods from the diet in about 80 per cent of the cases. Such a large chance of obtaining relief would surely appeal to any sufferer from migraine.

Food sensitization seems to be responsible for many other syndromes—canker sores, recurrent abdominal colic, bladder irritability in the absence of infection, Meniere's syndrome, arthritis, neuralgia, and epilepsy. Cases of each of these diseases have been reported in which symptoms were relieved by the withdrawal of the offending protein. Many observers throughout the country are now attacking these diseases and others from the standpoint of allergy and the outlook for a better understanding of these obscure conditions in the near future is bright.

From a theoretical standpoint, I wish to caution my audience against using as donor a definitely allergic individual. The passive transfer of hypersensitiveness to an individual exposed to the particular protein may have serious consequences. If the donor is sensitive to feathers and the patient is put to bed on a feather pillow, an acute reaction may result. If the patient goes to the operating room in September with his nostrils filled with ragweed pollen and receives blood from a donor suffering from ragweed hay-fever, we may have a severe reaction. I have not found any reference to this subject in the literature but without further search would not claim it as an original suggestion.

In conclusion, I have presented to you, in a brief and sketchy form, the varied manifestations of allergy and have outlined the methods used in the determina-



tion of the proteins responsible for the symptoms.

## PREOPERATIVE CONSIDERATIONS OF PROSTATECTOMY\*

J. U. REAVES, M. D.  
Mobile

Our knowledge of the prostate gland dates back to the pre-Christian era, having been mentioned by Herophilus about 350 B. C. Sir Everard Home believed that prostatic enlargement was alluded to in the beautiful description of the natural decay of the body found in the book of Ecclesiastes, the 12th chapter, the 6th verse, where it is written "or the pitcher be broken at the fountain, or the wheel broken at the cistern," the first alluding to urinary incontinence, the second to acute retention. For two thousand years little or no advance was made in our knowledge of the prostate. Nicola Massa, who lived in Venice during the sixteenth century, is accredited with having discovered the prostate gland and of having been the first to give it a general description. During this same sixteenth century, Riolanus was the first to suggest that there could be an obstruction to the urinary flow from the vesical caused by a swelling or enlargement of the prostate.

The first to recognize that urinary strangury was due directly to a hypertrophy of the prostate was that renowned surgeon of the sixteenth century, Ambrose Pare, who was originally a blacksmith and barber's apprentice.

It is only in recent years that the prostate has acquired the conspicuous place it now holds in present day surgery, and most of the surgeons are yet alive who contributed to the rapid advance which prostatic surgery has made. No longer do we tell these patients that they are old men who have lived their time, or that they are too old for operation. On the other hand we tell patients suffering from vesical neck obstruction of the excellent outlook surgery has in store for them, of the functional and symptomatic cure that follows, as well as the low mortality which present day surgical methods have obtained.

\*Read before the South Mississippi Medical Society, Hattiesburg, March 26, 1931.

The prostatic secretion gives motility to the spermatozoa, thus making the male fertile; immobile spermatozoa are not fertile. The prostatic secretion also gives an odor to the seminal fluid. This fact is of no importance in man but is of utmost importance in the lower animals, especially rodents.

This monograph has to do with disturbances of urinary function due to definite pathology of the prostate, the annoying symptoms of such pathology making their appearance in middle life. Fifty years or more ago prostatic troubles in men under sixty years of age were practically unknown. Today the literature contains several unique examples of distressing symptoms in patients under fifty years of age, but the fact is that these cases are seldom observed. The youngest patient in my own practice to be operated on for vesical neck obstruction due to enlarged prostate was fifty-one years of age. Hunter McGuire holds that enlargement of the prostate may exist in younger men and the symptoms of urinary disturbance not manifest themselves until the urinary tract, along with the rest of the body, begins to show the results of changes brought on by advancing senility. In other words, prostatic hypertrophy is essentially a disease of senility, age being the most important predisposing factor in its development.

Prostatic obstruction, with its secondary urinary tract pathology and its bearing upon the vital body functions, is well known to the medical profession, yet many of these cases are brought in after retention is complete and the general system is more or less undermined through impaired renal function and its secondary effects. The early operative relief for these cases is pretty generally understood, and with the aid of improved technique, regional anesthesia, proper preparation and watchful postoperative care, the mortality is surprisingly low.

In the majority of cases, the first term applied to disturbances of the urinary function is cystitis; however, we know that very few of these cases are actually cases of cystitis. In fact we consider cystitis as relatively unimportant, knowing that the bladder is rarely ever primarily infected. The so-called catheter cystitis is, in many cases, a misnomer and a misconception,

and when present is due to injurious mal-treatment. I am convinced that the catheter rarely carries infection or traumatizes the bladder. The trauma caused by the catheter or other instrument in such cases is chiefly situated where spinctures resist its passage, and herein is the cause of the spread of the infection and its flaring as an acute symptom. Should catheterization be necessary, it may or may not be very difficult owing to the condition of the intra-urethral spincture, and in such cases catheterization is most always followed by a urethral chill and fever. It is not infrequent that a urethral chill and fever accompany the extreme tenesmus suffered by some of these cases who have not been catheterized.

It is quite a prevalent belief that the large adenomas, which constitute most cases of so-called prostatic hypertrophy in old men, are growths from the true prostatic tissue. Such is not the case as adenomas do not spring from the original embryonic tubules which when fully developed constitute the adult prostate gland. Hypertrophy of the prostate in adenomatous growths is a misnomer. The senile adenoma has its origin in the glands of Albarran and the submucosal glands which are located on the floor of the prostatic urethra, between the mucous membrane and the actual prostatic tissue itself. These glands extend from the upper level of the verumontanum up to and sometimes within the margin of the internal vesical spincture. As the adenomatous growth arising from these glands develops the ejaculatory ducts and coliculus are pushed forward, and an atrophy of the prostate gland is produced. The adenoma follows the lines of least resistance in its development which is upward within the bladder causing the large obstructing intravesical masses we so often encounter and which are so easily enucleated suprapubically or infrapubically as well.

These submucosal glands and glands of Albarran remain quiescent during early adult life; however, 30 to 40 per cent begin to undergo adenomatous changes in varying degrees as the patient enters the fifth decade. These adenomatous changes are symptomless, until, by a compression of the urethra resulting from their hypertrophy, an obstruction is caused, giving rise

to the usual retention symptoms. The amount of obstruction produced by the glandular enlargement is commensurate with the ability of the detrusor muscles to open the vesical orifice. It is quite possible for these glands to enlarge laterally and assume quite large proportions without encroaching upon the urethral lumen, producing no difficulty in micturition. When the hypertrophy projects backwards from the median position of the prostate, residual urine and frequency of micturition will be more marked and will give earlier symptoms.

Many and varied reasons for the sudden increase in growth of these submucosal glands have been given, but none of them rest upon scientific grounds. It must be remembered that prostatic infections which tend to cause a sclerosis and fibrosis of the prostate gland and adnexa are separate pathologic entities. Though they cause symptoms, due to the degree in which they obstruct the urinary out-flow, which symptoms are similar in effect upon the patient as those caused by hypertrophy or enlargement of the adenomatous growth of the submucosal glands, the underlying causes, however, are at variance with each other.

The necessity of making a thorough rectal examination of males who have reached middle life is brought out by the fact that palpable nodules found in the prostate upon rectal examination are usually considered to be diagnostic of carcinoma. This frequently presents quite a problem to the urologist, the conclusive diagnosis being made only after operation. We must bear in mind that fifteen per cent of all men seeking relief from prostatic obstruction have carcinoma of the gland, this being the chief type of malignancy found in the urinary tract, occurring most frequently in the bladder, next in the prostate and next in the kidney. Modern urologic diagnosis is causing the frequency of incidence of carcinoma to be appreciated more and more.

A thorough rectal examination should be a part of the physical examination with the hope that irregularities may be detected, and induration or fixation of the gland determined in the occasional case at least when operation or radium might be employed with the hope of eradicating or ar-



resting pathologic progress; thereby a patient may be given years of life and comfort. The palpable size of the protrusion in the rectum, caused by the glandular enlargement, is no indication as to the differential diagnosis between adenoma and cancer.

In all cases where examination arouses suspicion of malignancy an x-ray examination of the pelvis and lumbar spine should be carried out. Further, the patient should be questioned closely as to sciatic pain. Frequently a patient with only a small carcinomatous area in the prostate will have metastases to the lumbar spine or pelvic bones.

In cases with glandular enlargement, the working capacity of the bladder is reduced by the amount of residual urine present. However, in some cases the bladder dilates as the residual urine increases, allowing the working capacity of the bladder to remain in the vicinity of normal. This loss of tone to the bladder musculature detracts from the force of the urinary stream.

Difficulty in voiding usually comes on gradually, one of the first symptoms being nocturnal voiding coming at the same time that the patient notices he does not have the force to his stream that he formerly had. A little later he has difficulty in starting his stream. At the same time it is less forceful. Voiding becomes of greater frequency, finally an every hour occurrence. Then with or without definite history as to cause, he is unable to void or voids with a great amount of tenesmus and pain. The glandular enlargement may cause dribbling, first noticed at the end of micturition and advancing as a nocturnal or a nocturnal and diurnal symptom.

In the enlargement of the adenomatous submucosal glands the pressure upon the prostatic substance gives symptoms of temporary acute prostatitis. The symptoms of bladder disturbances are first urethral symptoms. Since few subjective bladder symptoms be found, the evidence would indicate that pathology encroaching within the urethra was the promoting factor in the so-called bladder symptoms.

In some cases the intra-urethral enlargement of the gland forms a clinical picture of such outstanding boldness as to divert all suspicion from the actual causa-

tive lesion, resulting for months or even years in the treatment of the effect rather than the cause. In fact suitable proficiency in the diagnosis of such lesions can not be shown in the absence of expert knowledge of the application of urologic diagnostic methods.

Vesical neck obstruction, incident to glandular enlargement of whatever form, causes back pressure during micturition, producing hypertrophy of the trigone and thickening of the bladder wall, being followed still later in some cases by dilatation of the bladder as a whole, with or without the formation of diverticula of more or less degree, single or multiple. The back pressure thus caused refluxes up the ureters, damming back upon the pelvis of the kidneys, destroying ureteral peristalsis, and dilating the kidney pelvis, ultimately making of the ureter a passive carrier of urine. When this occurs drainage of the kidney pelvis depends upon the secretory pressure of the kidney and gravity, both of which are greatly impaired when the frequency is aggravated, thereby causing a greater degree of tenesmus. Should such a procedure destroy the power of the secretory pressure of the kidney to drain the kidney pelvis, reabsorption of a greater or less degree will take place directly into the renal venous system, causing uremia.

In simple cases of glandular enlargement diagnosis presents no difficult problem. A careful history, rectal examination, residual urine (two ounces or more is pathologic), and a cystogram (this to be done with the vesical filled with air if the case is suitable) should enter into consideration. Cystoscopy can be done, but is not advisable in all cases nor is it always necessary.

The patient suffering from the earliest symptoms of prostatic enlargement should not be denied too long the benefits of operative relief. I always insist upon operation when the amount of residual urine is three ounces or more or when the patient admits that the nocturnal frequency is wearing him down. I find that these cases during convalescence all wish that they had been presented for operation years before. If sufficient study is given each case it will be shown that definite pathology must be removed. As has been pointed out, some patients empty their bladder even in the pres-

ence of well defined hypertrophy, yet anything that will cause acute congestion of the pathologic vesical neck will give rise to acute retention, the suffering from which will be as grave as a well looked after operative risk. Remember that there is very little if any difference in the symptomatology of a simple adenomatous hypertrophy and a carcinoma of the submucosal glands. In fact very few cases of carcinoma can be diagnosed before a competent pathologist has made a section of the removed specimen. This calls all the more for early operative relief.

In all cases we use the dilution and concentration kidney function tests, gaining thereby earlier information in reference to the functional capacity of the kidneys. The earliest sign of renal impairment is shown by the inability of the kidneys to dilute and concentrate the urine. Such a test will show definite deviation from the normal very soon after impairment begins, being positive before sufficient change has taken place in the renal epithelium to interfere with the secretion of the dyes, or for retention to have taken place as shown by the changes in the blood chemistry. If this test shows the kidney function to be of a certain standard of dilution and concentration power a one-step suprapubic prostatectomy is the procedure. If this standard is not reached, suprapubic drainage is the procedure, waiting until the kidney function gets within safe limits before enucleation of the enlarged gland is attempted. No removal of the gland is attempted until the concentration and dilution test of the kidney function assures that the patient will not have uremia.

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**Anesthesia and the Anesthetist**—The anesthetist is an important member of the surgical team for the reason that the life of the patient is in his hands during the operation. A mistake in the dosage of the anesthetic or a failure to comprehend the condition of the patient may spell disaster. The ability to administer a given anesthetic so that the patient leaves the operating room alive is but a minor part of the anesthetist's duty, the major part being to know when the patient begins to show signs of approaching shock so that its establishment may be prevented and to judge intelligently as to the amount of surgery the patient is able to withstand. This he cannot do unless he has studied the patient beforehand and is

aware of the patient's handicaps whether they be in defective kidneys, liver, heart, arteries, blood or lungs. His study should include a history of the case; for example, a loss of weight is a factor which detracts from the patient's endurance. An anesthetist has no right to anesthetize a poor-risk patient, especially for a serious operation without knowing as much about the patient as the surgeon does. Sometimes, unfortunately, this is very little.

The anesthetic and the anesthetist are closely associated with the operation. The anesthetist should be in position to observe the operation so that he can anticipate the needs for relaxation. When he cannot see, it is necessary to carry the patient in a constantly deep anesthesia, thus unnecessarily inflicting upon the patient an excess of the anesthetic.

If the surgeon and anesthetist held more frequent conferences in selecting the anesthetic for the handicapped patient, the mortality rate would probably be reduced.

Anesthetics as a whole fall into two distinct groups, namely the revocable and the irrevocable. The revocable anesthetics are under direct control of the anesthetist, that is, the dosage may be varied at will and, if an overdose is accidentally given, it may be eliminated and the patient brought back to the zone of safety. This group is made up of the inhalation anesthetics, which include ether, nitrous-oxid, ethylene, chloroform and ethyl chloride.

The irrevocable group consists of those agents which, when once administered, cannot be recalled. If alarming symptoms develop, all that can be done is to combat them. It is impossible to reduce the amount of the agent in the circulating blood. In this group belong the various local anesthetics, cocaine, novocaine, neocaine, quinine urea hydrochloride, stovaine, sodium amytal, pernacton, avertin and colonic oil-ether. These agents are used to induce local, block spinal, intravenous and rectal anesthesia.

As the specialty of anesthesia has advanced and surgeons have become more alert to the importance of the anesthetic in the recovery of the patient, there is a tendency to get away from using any one anesthetic routinely and to study the requirements of each case individually, especially the poor-risk patient. If any anesthetic is to be used routinely it should be selected from the revocable group. However, there are two agents in the irrevocable group, namely, novocaine and quinine urea hydrochloride, whose toxicity when used for local anesthesia is so slight that their use routinely is justifiable.

The routine use of spinal, intravenous or rectal anesthesia is, in the writer's opinion, not justifiable for the reason that these methods of anesthesia are not yet sufficiently well developed as to make them entirely safe. They should be employed only in those cases where their special advantages more than outweigh the danger incurred by their use.—Evans: *New York State J. Med.* Feb. 1, 1932.



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## MEDICAL AND HOSPITAL CARE FOR PEOPLE OF MODERATE MEANS

The newspapers and lay magazines have had much to say regarding the high cost of medical care. Some of the editors of daily newspapers and certain magazine writers, have made vicious attacks on the medical profession as being mercenary and as rendering poor service to the middle class who cannot pay the prevailing prices for medical care. They claim that patients in endowed charity hospitals and the very rich receive the best of medical attention, while the family of the man on a small salary, who refuses charity, and who cannot pay big fees to specialists can not get the best medical and hospital service.

Thinking physicians must admit that while the medical profession as a whole is not commercialized, there are a few, the exceptions not the majority, who sometimes charge exorbitantly for their services; just as there are lawyers, and men in other professions, who think first of the dollar and then of the service they can render their patrons. Certainly the general practitioner cannot be accused of being a party to the increased cost of medical care because generally speaking, his fees are no higher than they were twenty-five years ago, while the cost of maintaining an automobile and a modern office have increased his expenses at least fifty to one hundred per cent. Likewise the family physician must go to medical meetings and buy and read expensive medical books and journals if he would keep abreast with medical progress, and be prepared to render the best service to his patients.

It not only is true that the general practitioner's fees are low, he collects only a relatively small proportion of the amount he charges his patients. The doctor who collects 75 per cent of what he books each year is an exceptional business man. The average collections of the general practitioner are not more than 50 or 60 per cent of what he charges his patients—not counting the large amount of charity practice he does each year. During this period of business depression the general practitioner who collects 25 per cent of his charges is the exception; and today there are many thousand physicians who can not pay office rent and whose families are in actual need of the necessities of life because their patrons can not, or do not, pay them for their services.

Specialists in every department of medicine are usually willing to reduce their fees to meet the patient's ability to pay. If a patient is charged more than he is able to pay it is usually because his physicians are not aware of his inability to pay the regular fees. The injustices which sometimes occur may be obviated if the patient will go first to the general practitioner and if he thinks it necessary for him to go to a specialist, a letter from him stating the patient's inability to pay the regular fees will always result in the specialist or specialists, rendering bills that the patient can pay without financial distress.

Hospital rates average about the same as the rates in first-class hotels though, in addition to room and meals, nursing service is provided. The only reason that a large proportion of hospitals can carry on is because they are endowed. The private hospital is rapidly passing because few are self-sustaining. It, therefore, is evident that hospitals cannot reduce their rates and continue to operate. The most important item of expense of hospitalization is the day and night special nurses. They charge \$6.00 a day and their board is \$1.50 a day, so that for two nurses it amounts to \$15.00 a day—usually as much or more than the total charges of the hospital and physician or surgeon. The nurse's wages and the hospital charges have to be paid weekly, so that often there is nothing left with which to pay the physician or surgeon. The patient leaves the hospital owing the doctor.

The physician or surgeon is sometime to blame for the complaints about the high cost of medical service for the middle class in that when he sends a patient to a hospital he does not have a frank business talk with the man who expects to pay the bill, and find out what he is able to pay; and if his patient is a man of moderate means he should be informed that the service in a ward, semi-private room, or an inexpensive room is the same as the more expensive rooms, and the physician should insist that the services of the special nurse be dispensed with when it is not necessary. The man of moderate means should be frank with his medical advisor about the kind of accommodations in a hospital that he can pay for and save enough to pay his physicians. If the man of small means cannot pay his physician all that he owes him, he is usually given a reasonable time to pay his medical or surgical fees.

Community hospitals are helping to solve the problem of the high cost of medical service because they can be conducted at less expense than hospitals in large cities; and the physician, or surgeon, in the average town or small city knows the financial condition of his patient and he does not allow him to have hospital accommodations for which he is unable to pay. It is also true that the community hospital is as well prepared to care for the great majority of the sick as the large hospitals in the city at a much less cost.

The general practitioner and the general surgeon are qualified as well as the specialist to look after probably nine-tenths of illnesses that afflict mankind; and the public should look to him to diagnose and treat the more common diseases and injuries. He can be trusted in cases of difficult diagnosis, or where a specialist's services are needed, to refer his patient to the physician best prepared by training and experience to treat the patient. It certainly is the exception and not the rule, for the physician, whether a general practitioner or a specialist, to consider his fee and not give the patient the best chance to get well. The only consideration for the conscientious physician is what is best for the patient.

What may be done to give the man of moderate income the best medical and surgical service without loading him with debt that will be a burden for the rest of his

life? Perhaps the first step is for him to employ a family physician or select a general practitioner, whom he can trust, and go to him first in every case of illness. If the physician thinks the services of a specialist are needed he knows the qualifications of physicians in all the specialties, and he can be depended upon to send his patient to the best prepared to give the particular service needed; and he also will see to it that the patient is charged a fee that he can pay. The general practitioner is likewise prepared to advise whether or not his patient should go to a hospital, and if so he can select one with rates suited to the patient's pocketbook.

It has been suggested that state medicine would solve the problem of the high cost of medical service for people of moderate means; but it comes from those who are not familiar with government aid in providing medical treatment for its laboring population. State medicine exists in England, Germany and Russia. In those countries government doctors who treat the sick are not very highly respected and the services they render to the supposed beneficiaries of the system are most unsatisfactory. The problem of the high cost of medical and surgical service for the man of small means can be solved by a better understanding between the public and the medical profession.

S. H.

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#### PUBLIC HEALTH AND SHEPPARD-TOWNERISM

An editorial entitled *Federalization of Health and Hygiene Through Sheppard-Townerism*, published in the January 30, 1932 issue of the Journal of the American Medical Association, is so weighty with inaccuracies and immature logic that a few pertinent facts, in rebuttal, are presented below:

The introductory paragraph of this editorial is so cunningly phrased as to convey the impression that the Sheppard-Towner Act which became a law November 23, 1921, expressly authorized the Children's Bureau of the Department of Labor to "enter into agreements or compacts with such states as were willing to surrender to the Federal Government for monetary considerations their rights to supervise and control maternal and child hygiene". This



state of affairs continued until, after seven years operation, the Act died, because "Congress had killed it by express repeal".

1. Alabama was one of the states to enter into a compact with the Federal Government for the expenditure of certain joint governmental funds, Federal and State, in the interest of maternal and infant hygiene. There was no suggestion that Alabama should surrender any of her rights to supervise and control its maternal and infant hygiene activities nor did Alabama surrender any of these rights. It set forth its program on paper and received the endorsement of the Federal Board of Maternal and Infant Hygiene. During the entire seven years of its operation, Alabama participated in the Sheppard-Towner funds. At no time and under no circumstances did the Federal Bureau attempt an irksome type of domination of state affairs. A consensus was reached and the joint program was prosecuted upon a common ground. This policy insured a program of essentials, leaving the manner and methods of administrative detail wholly within the hands of the State Health Department. In this connection, the medical profession of this State will do well to recall the fact,—to which attention was directed by the State Board of Censors in its last annual report—that a survey recently made of over eleven hundred maternal deaths, revealed that the pregnant woman in Alabama receives the least amount of prenatal care and had the highest death rate from puerperal albuminuria and convulsions of any state of the fifteen states embraced in the studies, and that 78 per cent. of these deaths had received no prenatal care. Such disheartening data as these sound a clarion call for initiative and leadership from within organized medicine, bolstered by every agency, official and lay, at our command.

The editorial complains that "during the entire time it (the Sheppard-Towner Act) did not develop a single new idea in the field of maternal hygiene".

2. The object of the Sheppard-Towner program was to secure the practical application of the scientific knowledge—"new ideas", which had been developed in the 19th century by Semmelweis, of Vienna, and Holmes, of Boston. There are places in Alabama, and doubtless in numerous

other states, where the application of these scientific facts to the care of pregnant and parturient women, if not quite new, is at least more observed in the breach than in the practice by the very men who complain the loudest of "a surrender of state's rights".

The editorial asserts that "as a Federal experiment in maternal and infant hygiene, it was a failure".

3. Before a just judgment can be reached as to success or failure of a great social experiment an appropriate means for measurement must be found by which to appraise it. The great objective sought in this case was primarily an educational one. The yardstick of measurement might well be sought in the lives and practices of the people. No statistician and surely no physician would expect a "noble experiment", set up to change age-old habits and professional practices of physicians, to result in an appreciable lowering of the maternal death rate in seven and one-half years. This problem is much too complex and many-faceted to be solved so easily or so promptly. But does this furnish sufficient reason why it should be abandoned?

The most amazing utterance which the editorial makes is:

"Will not such efforts, if successful, exaggerate health activities in rural districts, and particularly health activities for mothers and children, at the expense of health activities for urban districts and in fields other than those of maternal and infant hygiene"?

Shades of Hippocrates and Galen! Who ever thought to see a physician standing at arms in the political arena to protect "us city folks" against the neglect that would be occasioned by a small modicum of health protection for "our country cousins"? Or defending the masculine population against competition of mothers and babies for the necessary attention of health authorities.

"Will they not tend to destroy a local sense of responsibility for health activities"? is asked anxiously.

4. There is barely a faint glimmer of justification for the fear that Federal participation may tend to impair, not destroy, the local sense of responsibility. But even this can be guarded against by wise and careful administrative policies. A local sense of responsibility for self-direction of

affairs is something which cannot be destroyed by bungling, in these United States.

Again:

"A considerable number of states did not appropriate for maternal and infant hygiene up to their full financial ability until after the repeal of the Act. Apparently Federal aid has a *deadening* effect on state initiative"!

That must have been a slip of the pen. The writer meant to say *stimulating*. Alabama was so stimulated by her seven years of joint effort that she made good the loss of Federal appropriations.

At last, in the final paragraph a wooly-head emerges from the wood pile:

"Insidiously it tends to bring medical activities in the states under the supervision and control of Federal authorities".

5. Inevitably, it tends to bring medical activities in the states under the arc of an enlightened lay understanding; but the honest and conscientious physician has nothing to fear from this.

J. N. B.

#### THE PRESENT STATUS OF B C G

The production of artificial resistance to tuberculosis has proved a continual *ignis fatuus* of medicine. Since Koch's announcement of the discovery of tuberculin, false hopes have been repeatedly raised, some of the notable *debacles* being Friedmann's "turtle bacillus" and, more recently, sanocrysin.

It is well known that a definite, substantial immunity results following tubercle formation. Living, virulent tubercle bacilli, therefore, are effective in producing resistance, but all attempts at immunization with dead or avirulent bacilli and their products have resulted in complete failure. It is now generally believed that resistance to tuberculosis depends upon the presence of anatomical tubercles, is proportionate to the extent to which tubercles are present and lasts as long as the tubercles persist. Vaccination with minute doses of living, virulent tubercle bacilli has been done experimentally by Webb and Williams<sup>1</sup>, who injected two children of tuberculous pa-

rents, starting with a single bacillus and increasing the dosage until the children withstood the injection of large numbers of virulent organisms. This practice, for obvious reasons, could never be adopted for general use.

Attenuated living cultures have often been used and, in fact, results in animals have indicated a considerable degree of success. Various methods of attenuation have been tried, treatment with chemicals, growth on unfavorable media or long continued artificial cultivation. The most recent and extensive investigation is that of Calmette and Guérin. Their organism, known as B C G (Bacille Calmette-Guérin), is a bovine bacillus, isolated from a calf in 1908 and grown for over two hundred generations on a medium consisting of potato saturated with glycerin and bile. It was shown to be entirely non-infectious for calves and other animals. After apparently successful immunization of calves by injections of this organism, Calmette proceeded to the vaccination of children by oral administration, the number of children so treated now being several hundred thousand.

Calmette and his collaborators claim that the statistics show a striking and indisputable reduction of the incidence of tuberculosis in the vaccinated groups as compared with the normal incidence of the disease. These studies are not beyond criticism and have been seriously questioned by statisticians. The satisfactory demonstration of the value of any method of producing immunity to such a disease as tuberculosis is obviously difficult and requires a long period of time for a final conclusion to be reached.

One of the statements of Calmette regarding the characteristics of his organism is that it is entirely safe and, since it is completely avirulent and incapable of producing infection, it can be tried on a large scale; in other words, it can do no harm and may do good. It is not at all certain that even this statement is true. While no instance is on record where Calmette's strain has become virulent when kept on this medium, there is experimental evidence that even this old strain, kept for years on artificial media can, in favorable circumstances, become infectious for guinea pigs. Furthermore, the terrible af-

1. Webb, G. B., and Williams, W. W.: J. A. M. A. 1911, 57, 1431.



fair in Germany, which has become known as the "Lübeck disaster", is an example of what may happen when the preparation of the cultures used for inoculation is placed in the hands of careless or inexperienced workers. What actually occurred in the Lübeck laboratory to cause the infection and death of so many children who received the inoculation, will never be known. There are three probable explanations: mislabelling of cultures, contamination of the B C G cultures with virulent bacilli, or a reversal of virulence, due to the use of a different medium for its cultivation. That this mutation to virulent organisms may occur has been shown by Petroff<sup>2</sup> who, for this reason, is strong in his condemnation of the B C G vaccination. He points out that, even though no change has ever been detected in cultures on Calmette's potato-

bile medium, virulent organisms can be isolated on more favorable media and since this occurs, it is not impossible that, in the animal body, this change to virulent forms may be even more common.

The safe view-point, in the present state of our knowledge, is doubtless one of conservatism, as expressed by Zinsser<sup>3</sup>: "We do not believe that experimentation with living tubercle bacilli of any kind—attenuated or not—is justified at the present time; first of all, because it is not easy to control the complete absence of virulent organisms and because our growing knowledge of mutation renders it at least possible that attenuated organisms incorporated into the body of a susceptible animal might, under special circumstances, regain a certain degree of virulence."

L. C. H.

2. Am. Rev. Tuberc. 1929, 20, 275.

3. Resistance to Infectious Diseases. N. Y. Macmillan Co. 1931, Ed. 4, p. 512.

## PRELIMINARY PROGRAM

SIXTY-FIFTH CONSECUTIVE ANNUAL SESSION, MEDICAL ASSOCIATION OF THE STATE OF ALABAMA, MOBILE, APRIL 19-22, 1932

First Day, Tuesday, April 19

Morning Session

1. Call to order at 10 A. M. by the President—  
*Toulmin Gaines, Mobile.*
2. Invocation—  
*Rev. Warren DuBose, D. D., Mobile.*
3. Address of Welcome—  
*J. H. Dodson, President, Mobile County Medical Society.*
4. Message of the President—  
*Toulmin Gaines, Mobile.*
5. Report of the Senior Vice-President—  
*G. F. Littlepage, Sheffield.*
6. Report of the Vice-President, Southwestern Division—  
*K. A. Mayer, Lower Peach Tree.*
7. Report of the Vice-President, Northeastern Division—  
*W. M. Salter, Anniston.*
8. Report of the Vice-President, Southeastern Division—  
*G. W. Williamson, Hartford.*
9. Report of the Secretary—  
*Douglas L. Cannon, Montgomery.*
10. Report of the Treasurer—  
*J. U. Ray, Woodstock.*
11. Report of the Committee of Publication—  
*Fred Wilkerson, Chairman.*
12. Report of Standing Committees:
  - (a) Mental Hygiene—  
*W. S. Littlejohn, Chairman.*
  - (b) Prevention of Blindness—  
*W. G. Thigpen, Chairman.*

- (c) Committee to Meet Druggists—  
*W. S. Rountree, Chairman.*
- (d) Maternal Welfare—  
*J. R. Garber, Chairman.*
- (e) Infant Welfare—  
*J. W. Simpson, Chairman.*
- (f) Military Committee—  
*J. M. Mason, Chairman.*
- (g) First Aid—  
*J. D. Heacock, Chairman.*

Afternoon Session

Tuesday

Call to Order, 2:30 P. M.

Unfinished and Miscellaneous Business

Scientific Papers

1. The Acute Abdomen as Encountered by the Country Doctor—  
*C. P. Gay, Geneva.*  
Discussion to be opened by A. S. Frasier, Dothan, and J. M. Barfield, Lineville.
2. The Increasing Mortality from Appendicitis—  
*J. Otis Lisenby, Atmore.*  
Discussion: W. R. Meeker, Mobile, and J. Mac Bell, Mobile.
3. Peptic Ulcer from the General Practitioners' Standpoint—  
*W. R. Carter, Repton.*  
Discussion: G. C. Kilpatrick, Mobile, and G. O. Segrest, Mobile.
4. The Status of Diphtheria Immunity in a Typical Alabama County—  
*O. L. Chason, Montgomery.*

## 5. Recent Advances in the Prophylaxis of Diphtheria Toxoid—

A. H. Graham, *Opelika*.

Discussion on papers of Drs. Chason and Graham to be opened by A. M. Shelamer, Union Springs, and W. L. Orr, Ozark.

## Evening Session

## Tuesday

Call to Order, 8:00 P. M.

Unfinished and Miscellaneous Business

## Scientific Papers

## 1. The Newer Concept of the Etiology of Cancer—

*Irwin P. Levi, Anniston.*

Discussion: H. B. Wilkinson, Montgomery, and R. V. Taylor, Mobile.

## 2. Tuberculin Testing—

*P. W. Auston, Montgomery.*

Discussion: T. E. Tucker, Monroeville, and Clifford L. Lamar, Birmingham.

## 3. Phrenirexis in the Treatment of Tuberculosis—

*N. R. Clarke, Mobile.*

Discussion: Emmett Frazer, Mobile, and E. S. Sledge, Mobile.

## 4. Bacteriophage: Its Nature and Therapeutic Application—

*John E. Walker, Opelika.*

Discussion: D. H. Doherty, Selma, and Burr Ferguson, Birmingham.

## Second Day, Wednesday, April 20

## Morning Session

Call to Order, 9:00 A. M.

Unfinished and Miscellaneous Business

## Scientific Papers

## 1. Subject to be announced—

*S. D. Suggs, Montgomery.*

## 2. The Diagnosis and Treatment of Acute Intestinal Obstruction—

*Alton Ochsner, New Orleans.*

Discussion: J. M. Mason, Birmingham, and E. F. Moody, Dothan.

## 3. Observations in Spinal Anesthesia—

*Jesse H. York, Atlanta.*

Discussion: G. C. Ussery, Roanoke, and S. R. Benedict, Birmingham.

## 4. 11 A. M.—Jerome Cochran Lecture—

*A. Benson Cannon, Vanderbilt Clinic, New York.*

## 5. Obstetric Narcosis—

*Sidney Meeker, Memphis, Tennessee.*

Discussion: C. M. Cleveland, Mobile, and C. G. Laslie, Montgomery.

## 6. Gynecologic Office Equipment—

*T. B. Sellers, New Orleans.*

Discussion: J. M. Weldon, Mobile, and Gilbert Douglas, Birmingham.

## 7. Aberrant Endometrium—

*Luther L. Hill, Jr., Montgomery.*

Discussion: M. Y. Dabney, Birmingham, and H. B. Dowling, Mobile.

## Wednesday Afternoon

## A Ride on the Bay

(Oysters on the half shell, Sandwiches, and——)

## Evening Session

## Wednesday

## PUBLIC MEETING

## 1. The Obligations and Opportunities of Local Medical Men—

*E. H. Cary, President-Elect, American Medical Association.*

## 2. Our State Association—

*Jerre Watson, Anniston.*

## 3. Address—

*J. N. Baker, State Health Officer.*

## Third Day, Thursday, April 21

## Morning Session

Call to Order, 9:00 A. M.

Unfinished and Miscellaneous Business

## Scientific Papers

## 1. Breast Feeding—

*L. M. Walker, Jasper.*

Discussion: W. M. Salter, Anniston, and Robert Parker, Montgomery.

## 2. Hyperinsulinism (Insulogenic Hypoglycemia) as One of the Causes of Epilepsy: Its Control by Diet—

*Seale Harris, Birmingham.*

Discussion: W. W. Harper, Selma, and J. Harold Watkins, Montgomery.

## 3. Allergy in Children with Particular Reference to Food Idiosyncrasies—

*Jacques Baumhauer, Mobile.*

Discussion: Jas. S. Jordan, Georgiana, and N. B. Cannady, Dothan.

## 4. The Clinical Aspects of Allergic Hay-Fever and Asthma—

*G. Heustis Fonde', Mobile.*

Discussion: Marion T. Davidson, Birmingham, and C. K. Weil, Montgomery.

## Thursday Afternoon\*

## SECTION MEETINGS

1:00 P. M.

*Programs of the several sections will appear in detail in the April issue of The Journal.*

## Evening Session

## Thursday

Call to Order, 8:00 P. M.

Unfinished and Miscellaneous Business

## Scientific Papers

## 1. Surgical Treatment of Neuralgias—

*Adrian Taylor, Birmingham.*

Discussion: W. H. Blake, Jr., Sheffield, and E. W. Cawthon, Plateau.

\*A note on regard to an interesting diversion of the afternoon will appear in the complete program.

\*Though the Association designated Wednesday afternoon for sectional meetings, it appeared advisable to ask the Chairman of the Board of Censors to approve a change to Thursday in order that a conflict with the boat ride might be avoided.



2. Brill's Disease: Sporadic Typhus—  
*C. P. Hayes, Elba.*  
Discussion: W. A. Lewis, Enterprise, and  
Henry Green, Dothan.
3. Typhoid Carriers: Observations of Their Dis-  
tribution—  
*L. C. Havens, Montgomery.*  
Discussion: D. G. Gill, Montgomery, and  
Chas. A. Mohr, Mobile.
4. Treatment of Hookworm—  
*Merle E. Smith, America.*  
Discussion: W. H. Abernethy, Troy, and W.  
C. Hatchett, Huntsville.

Fourth Day, Friday, April 22

Sitting as the Board of Health of the State of  
Alabama

Call to Order, 9:00 A. M.

1. Report of the Board of Censors:
  - (a) As a Board of Censors.
  - (b) As a Board of Medical Examiners.
  - (c) As a Committee of Public Health.
2. Revision of the Rolls.
3. Election and Installation of Officers.  
Adjournment.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### A REVIEW OF RADICALISM IN OUR ORGANIZATION\*

TOULMIN GAINES, M. D.  
Mobile

Why is it that words by gradual modification of their meaning acquire an import almost foreign to their original significance? In many cases their misuse is repeated until they cease to jar our sense of fitness and then as we become more accustomed to them we adopt them from unconscious imitation. We first endure then embrace them. The day seems near at hand when we will all doubtless use the word "instigate" (formerly applied only to deeds dark and devious) in connection with worthy works and noble deeds; we read daily accounts of some philanthropist who "instigated" this charitable undertaking or that commendable activity. Possibly this is because the word "promote" is meanwhile acquiring a dubious significance. The distinction between the conservative and the radical is invidious to neither, except when colored by the prejudice of the other. It then becomes the distinction between orthodoxy and heterodoxy; the first being my-dox, the latter your-dox. The conservative is considered the bump on the log while the radical is looked upon by his opponents as one who desires to uproot the growth of years. The word "conservative," suggesting conservation and preservation, is so proof against a modification of its meaning by a mere

tone, that it was supplanted by that coined monstrosity, a "re-actionist." The word "radical," however, having a double significance, a mere sneer can change its meaning from one who wishes to get to the root of the matter, to one who wants to eradicate the existing order. The Standard Dictionary, however, gives this meaning: "A member of a political party holding the most advanced and progressive views"; and gives this quotation, "We are often called upon to respect the courage of the radical, who breaks from the traditions, and faces the buzzing, stinging consequences for truth's sake."

Let us rapidly review the past and see who were some of these courageous radicals and what befell their daring attempts to change our existing order. Whence came this existing order with its impregnable rigidity, its inflexible resistance to change? Let us glance at its origin or more correctly its originator. For our organization, unlike Topsy, did not "just grow", it was made. John Locke, the greatest mind of his day, attempted to furnish our neighboring state with a constitution but it failed to work, because such things as a rule are slowly evolved, as they are moulded by the conditions, the environment, and the ideals of the people. But like Minerva, the Goddess of Wisdom, who sprang full panoplied from the brow of Jove, our organization leaped full-fledged from the Jovian brow of Jerome Cochran. Who then was this little Caesar and upon what meat had he fed that he has grown so great? Permit me a first hand description since I

\*Read at a meeting of the Northeastern Division of the Association, Sylacauga, January 19, 1932.

had the honor of knowing him from my early youth through the first six years of my work as a physician. Short of stature and not bulky of frame as some have described him, but slight and slender with a large head, rather sunken between the broad and stooped shoulders of the student; a voice light, high, and rather effeminate in social conversation, which, however, could become rasping and incisive in debate. His general appearance belied his power, but the steely glint of his gray eyes and the firmness of his thin-lipped mouth soon demonstrated though he was "the little corporal"; he was a veritable Napoleon. Coming to my home town immediately after the Civil War he mingled with a group of physicians who have been characterized as men who, cultured and prominent, enjoyed the love and confidence of the people of Mobile and of the entire State. Devoting their entire time to the cure of the sick, the exigencies of their enormous practices had resulted in the neglect of the county society activities. Dr. Cochran, a born organizer, with his heart ever set on the prevention of disease rather than on the practice of medicine, infused new life into an almost moribund association. Though a comparative stranger he made bold to criticize these grave and reverend seigniors and to reprove the prominent, influential, and to the manor born physicians for their laxity as an organized scientific body, and in so doing, as Dr. Sanders says, "he, Martin Luther like, set in motion a reformation destined not only to bear fruits for the Mobile Medical Society, but to extend itself to every county in the State and to result in a harmony and completeness of organization among medical men, such as does not exist anywhere else on the face of the earth". These are the words of his successor, and I can agree as to the completeness, but I am not always so sure as to the harmony. The comparison to Martin Luther is also somewhat paradoxical as the strength of our organization has been ascribed to our similarity to the organization of the Catholic church; and its defects to its tendency to require unquestioning submission to authority and absolute belief in never changing tenets. The term College of Counsellors suggests the College of Cardinals, the seventy clerics who are above all except the Pope, he being chosen

by them from their ranks. At no time in its history therefore has this remarkable achievement been without its violent critics, all of whom acknowledged the genius of the creator but disagreed as to some of its most distinctive features. The most salient criticism was that it could be construed as seeking to perpetuate its author in office. But since it is universally conceded that the most satisfactory government is that of a benevolent despot and since his wisdom and efficiency as a sanitarian were beyond criticism, Dr. Jerome Cochran, as State Health Officer, remained as virtual and actual head of the organization from 1873 until his death in 1896, his reputation as a beneficent leader untarnished, as a sanitarian the ideal of his profession, as a man the idol of many. To paraphrase an expression of the late Dr. Mack Rogers: "To all he was an inspiration, to many he was inspired."

On the title page of our transactions we find the words, Organized 1847 Re-organized 1868. Three years later, in 1871, Dr. Cochran submitted his plan for a new constitution. Was it accepted? No; action was postponed. Was it accepted in 1872? No; action was again postponed. "Finally," says our Red Book, "after much discussion pro and con, Cochran's constitution was adopted." This word con, implies that there was opposition dating back three years, causing these successive postponements and fighting to the last. As the Red Book expresses it, "it has been a target for assault to some of the unthinking members within the profession". Rather an unjust aspersion on some who may have differed, not because they were unthinking but rather because they preferred to do their own thinking. Under the regime of Dr. Cochran both the letter and the spirit of the organization were regarded as sacro-sanct. A critic was a renegade, adverse comment meant anathema. During Dr. Cochran's incumbency as Senior Censor, I can therefore find but one attempt to change the constitution. In 1884 a resolution was offered to make the term of the president of the Association three years. The Board of Censors ruled adversely on the advisability of making such a change at that time. Who then was this rash mortal that dared to suggest so radical an innovation? It was none other



than Jerome Cochran himself. Who else would have dared? When the mantle of the master fell upon the shoulders of Dr. Sanders the malcontents became more audible. Whisperings grew to mutterings and finally to open protests.

Let us now take up a few changes that were effected by persistence, tracing them from their inception to their final fruition. In 1880 Dr. Geo. Ketchum was chairman of a committee which recommended the establishment of a journal. In 1882 he asked for more time for his committee which still hoped to be able to start the journal. Dr. Cochran moved that the committee be abolished. Dr. Sanders opposed the motion of Dr. Cochran and the motion was lost. Who else would have dared?

In 1898, acting upon a resolution presented by Dr. Marechal, the Board of Censors declared the Alabama Medical and Surgical Journal to be the official organ of the Association.

In 1906, the President, Dr. Bondurant, recommended the establishment of a journal. The Board in its recommendation "realized the great departure it would be from the methods hitherto pursued, the general importance of the suggestion, and recommended thorough study before acting upon."

In 1913, Dr. Wilkinson introduced a resolution advocating a journal. The Board of Censors reported that it deemed it unwise to embark in journalism and, without stopping to give its reasons, reported against its adoption.

In 1917, Dr. Harris gave many cogent reasons for his resolution seeking to establish a journal. Under the Senior Censorship of Dr. Welch the Board expressed sympathy with the resolution but did not find it feasible.

In 1924, President Harper recommended a journal and, in the words of last year's committee (1931), "he clearly and concisely outlined the needs for it." Not until 1931, when the above mentioned committee, appointed by the Chairman of the Board of Censors, reported favorably upon it, was our Journal finally inaugurated and the efforts of fifty years consummated.

Now as to the voting representation in the Association, Dr. Geo. S. Brown proposed, in 1897, an amendment giving voice

and vote to all members. The 1898 Board of Censors ruled it was in contravention to the charter, out of order, and therefore not to be considered. By motion of Senior Censor Dr. Sanders, he was denied the privilege of the floor. When the president ruled that he had the privilege of the floor, his ruling was not sustained by the Association.

In 1901, President Cunningham recommended giving the vote to every member who paid his dues. It was given consideration by the Board; eight arguments against it were presented, the last being the necessity to change the charter. In 1904, President Cameron recommended a proportional delegation of one to every ten members. In 1906, President Bondurant forcefully made the same recommendation. In 1907, the Jefferson County Society advocated it. In 1908, Dr. McAdory proposed the eligibility of all members to vote and hold office. In 1909, Dr. Chenault offered a resolution making this same change in the constitution. In 1913, Dr. Cunningham Wilson and Dr. McLester offered similar resolutions. At this time Dr. McAdory, in his habitual resolution, increased the number from one to ten, to one to twenty, i. e., he decreased the proportional representation. And in 1915, Dr. McAdory's resolution took the form of representation proportional to our legislators, was passed, and finally placed in the constitution. The Board of Censors reported that this matter had already been attended to and acted upon by the Association and therefore recommended that Dr. McAdory's resolution be not adopted. This naive method, somewhat reminiscent of Davy Crockett's coon, converted the gadfly of the Association from the ranks of the radicals to the realms of the progressives. Dr. Welch stated to him on the floor, "you have been coming to the Association for the past hundred and ten years, trying to get more representation for the county societies and now, by the grace of God and the oligarchy, we are going to give it to you."

Dr. McAdory's second resolution, giving eligibility to office to all members of the Association, met defeat at this time and for seven more years, but finally became a part of the constitution in 1922, and by the grace of that fact, I am with you today.

His third resolution read as follows: "That it is the sense of this Association that Dr. Sanders resign either as member of the State Board of Censors or as State Health Officer; that it is the opinion of the Association that the Health Officer shall be the executive officer of the State Board and not its chairman." Needless to say this was reported adversely by the Board of Censors. Sixteen years before Dr. Bonduant had said in his presidential address, "there is much to be said in favor of a change which would leave the State Health Officer free to direct his energies to the multifarious and onerous duties of the position, leaving the general conduct of the Medical Association, as such, to the Chairman of the Board of Censors and to other officers." The Senior Censor replied in an elaborate argument of several pages opposing the suggestion.

And twenty-one years before, 1885, Dr. Riggs, of Selma, presented this in his presidential message: "It is known that our Senior Censor is also our State Health Officer. This, in my opinion, is unfortunate in effect. . . . The State Health Officer is elected by the Committee of Public Health, and shall be under the orders of the Committee of Public Health of the Association. We thus have the State Board of Health presided over by its subordinate officer, the State Health Officer, and in the intervals of the annual sessions of the State Medical Association, the State Board of Health is embodied practically in the person of one man. This is more responsibility than ought to be put on the shoulders of one man, and more than any one man desires who has had any experience in such matters. Such a course is not the wisest. The Senior Censor has much work to do; so has the State Health Officer. Both positions are beset with trouble, and liable to beget personal antagonisms too much for the popularity of one man to withstand." Needless to say these opinions were not endorsed by the Board of Censors.

And now, since these words ring as true today as when they were first sounded and since circumstances have effected what the most foresighted of us could not accomplish, let us not be deterred from fixing and perpetuating that which has long been believed to be best for our organization.

That such a course is not despoiling the temple or profaning the shrine, let me quote you from two of our revered Senior Censors. Dr. Welch, when opposing a nominating committee (Trans. 1920, page 79) said, "The policy of our Association in recent years has been to decentralize its government as rapidly and as frequently as was consistent with preserving the homogeneity of the system. The Board thinks that this would be reverting to the arbitrary methods to which so many of our members object." Dr. Sanders in 1905 (Trans., page 95) said, "All chartered bodies living under written constitutions find it necessary from time to time to amend or revise their constitutions, so as to embody in them alterations or additions that time and experience have shown to be wise or necessary."

Now one more dictionary definition and I am done. The Standard Dictionary says a conservative is "one opposed to change and therefore to progress." Let us remember then, that just as the revolutionist who loses is a rebel while the one that wins is a patriot, so the radical of yesterday becomes the progressive of tomorrow. And what then of today? Well, today let us ponder the words of Chauncey Depew:

"Educated intelligence keeps radicalism within proper limits and forces it to conserve the Highest Purposes, by harnessing it to the car of progress."

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## FORESIGHT AND VISION

J. N. BAKER, B. A., M. D.  
State Health Officer

Foresight and vision are not the earmarks of the mass mind. They represent the concentrated essence of the individual mind, peering far above and beyond the mass horizon and bringing down to earth hitherto unknown and untried truths for the betterment of all. Scientific experimenters, explorers and research workers are conspicuous illustrations of the daring and inquisitive mind far outstripping its fellows. Once the vision caught and the hidden secret brought to light, the mass mind greedily appropriates the kernel to its own use. This holds true in every walk of life, whether scientific, governmental or what not.



It so happened that, in the realm of public health, the medical profession in Alabama, at the very dawn of public health activities, produced a man—Jerome Cochran—who had not only foresight and vision but courage and executive ability as well. He envisioned then what today is an axiomatic and conceded fact, viz., that the field of public health is a specialized field, requiring for its successful prosecution, skilful and trained leadership and control. After much persuasion he was able to convince his profession of the soundness of such views. Once this was accomplished, he had little or no difficulty in showing the people of his State the wisdom of such a plan. The General Assembly of Alabama in 1875 took over bodily the medical machinery set up by Cochran in each county of the State and for the State at large, as its legal and duly constituted health agency and made it one of the important arms of the State government. In a word, this constitutes the uniqueness of Alabama's plan, viz., the definite placement of a highly technical field of governmental activity upon the shoulders of a specialized group within the State. Such a scheme has not its counterpart in any other state in the Union nor, to the writer's knowledge, anywhere else in the civilized world. The continued success of such a plan—for its success up to now stands unchallenged—will unquestionably hinge upon the vision and perspicacity of the leaders within this group to which so important a trust has been committed. At present, Alabama's public health system enjoys not only the full confidence and support of its own people, but the admiration of its sister states. Its machinery is smooth, flexible and democratic, with a minimum of extraneous political influence, which so often may prove baneful to sustained and carefully planned health programs.

The most important single responsibility now confronting the doctors of this State—i. e., the organized medical profession—is to see that no corroding forces spring up from within this group to eat away and destroy the usefulness of this rare type of health machine to which they have fallen heir. Its capacity for ready adjustment to modern ways of prosecuting health work has been amply proven by test and is conceded by the leading national health agen-

cies. So long as the medical profession recognizes the health department of this State as its own creature—flesh of its own flesh and blood of its own blood—and stands willing and ready to extend that parental support and guidance which is its due, just so long will it prosper, thrive and wax strong. Failing in this, its fate is surely to be engulfed in a political maelstrom and with detriment to all.

This fact, then, seems crystal-clear: The rank and file of the profession throughout the State must display sufficient interest to insure that suitable and proper representation is given them in the House of Delegates and in the College of Counsellors—the voting strength of the Association. This voting body, upon which rests the responsibility of selecting all Association officers—including the ratification of the election by the Board of Censors of the State Health Officer—should be dominated solely by a spirit of the fitness of the individual for the office sought, in so far as the good of the organization is concerned. The personally ambitious or politically minded member should quickly be made to realize that the high aims and purposes of this organization are not to be relegated to the background for the sake of personal preferment. Disharmony and factional discord, whenever they rear their ugly heads, must be promptly and definitely dealt with by showing that the basic principles upon which the success of this organization rests can never be submerged in the sea of personalities and petty prejudices.

This is the vision which should be displayed on the part of the parent body—The State Medical Association. But foresight and vision must not end here. The same spirit must likewise dominate the chosen servants—the officers of the parent body—to whom has been entrusted not only the destiny of the organization itself but also the lives and health of our State's people.

From the standpoint of what is now our major concern, viz., that of safeguarding and directing the public health, the chief problem confronting the State Health Officer and the Committee of Public Health is to see that the monies appropriated by the legislature are judiciously, sanely and economically expended in the purchase of more and better health for all the people of

the State. The legislature of Alabama, guided by the enlightened hand of the organized medical profession, has caught the vision and has outstripped some of the other Southern States in providing resources to adequately meet the public demands for this new and worth-while service. That this is so is a compliment alike to our legislative body and to ourselves. Today, Alabama is spending 24.5 cents per capita for public health—recognized as a pitifully puny pittance when compared with some other state activities—and yet this is more than some other of our sister states have to spend. Seventeen (17) years ago—in 1914—Alabama launched its first full-time health unit, the second in the United States. Today, she operates fifty-four (54), representing almost 90 per cent of the population participating in this beneficent type of health service. There now remain but thirteen (13) counties to be organized.

Within the past 14 years the death rate from typhoid fever has dropped from 42 to 7.9, in 1930; enteritis from 68 to 31; malaria from 22.5 to 11.9; pellagra from 46.8 to 23.6; tuberculosis from 131.8 to 84.3; diphtheria from 8.1 to 6.9. Hookworm disease, formerly so devastating to Alabama's efficiency, is no longer, save in a few counties, considered a major problem. These figures represent the tangible fruits of the labors of organized field work throughout the State; and while they may not be all that might be desired, yet they seem so convincing and so necessary as to justify every effort for their continuance.

The most urgent problem immediately confronting the administrative head of the health department, during this period of universal financial depression, is that of an increased subsidy from State funds to many distressed county health units in order to preserve for the people this service now more needed and more imperative than ever. Federal aid, coming to us through a grant to the drouth-stricken states, has been most helpful in this particular; but this will terminate July 1, 1932, unless an extension of this aid is procured by further legislative enactment, as is now planned. To further relieve the situation, effort is being made through a policy of rigid economy, curtailment and retrenchment, looking to the end that, of the

monies allotted for public health work by the State, every available dollar can be utilized for the preservation and continuance of health unit activities in the field.

The doctors, in many counties throughout the State where local appropriations to health units are being seriously threatened, are in position to render a conspicuous service to public health and to their communities by giving their unstinted support to the work. In more than one instance this has been done and with the result that the life of the health unit has been saved.

In the crisis through which we are now passing, it is highly probable that no group has felt the pinching blight of "hard times" more acutely than has the medical profession. But this fact should in no sense, serve to warp its vision, nor impair its courage in the broader and more helpful relations to its fellow man.

"Where there is no vision the people perish."

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**Social Features of Society Meetings**—Aside from the fruits that may be gathered in a scientific and sanitary way by county medical societies, the social features would richly repay the members for all of the time and effort expended in maintaining organization.

Among earthly blessings what one compares with the consciousness of being surrounded by true and genuine friends—friends who can be implicitly relied upon in the severest trials and troubles that come? What social surroundings so well calculated to inspire and seal such friendship as to "touch elbows" at frequent intervals with colleagues fighting the same battles with yourself, and led on by the same hopes that through the efforts of a harmonious and enthusiastic profession science will yet redeem man from many of the penalties of "that primal sin that brought death into the world and all our woe?" How grateful to feel that when called into consultation with a brother doctor you will be welcome, both as a consultant and as a friend! How comforting to know that when you and yours are smitten with disease, and perhaps crushed with grief, you can confidently call on any of your colleagues, feeling assured that they will cheerfully come, bringing you both skill and sympathy! How easy to make the social circle include the wives, sons, and daughters of the members, thus establishing in every county of the State a fraternity that would win the highest admiration of the people and place the profession on a plane above slander or reproach! Why not then promote and prove loyal to an organization that will do so much for you?—The Red Book.



## DEPARTMENT OF PUBLIC HEALTH

## BUREAU OF ADMINISTRATION

J. N. Baker, M. D.  
State Health Officer in Charge

## NEGRO HEALTH

The consideration of health for individuals and communities occupies a great deal of space in our modern thought processes and in the output of our twentieth century printing presses.

In our Southland this combined output of thought and printed page deals predominantly with health problems of the white race; but the 35.7 per cent of negro population in Alabama likewise presents a problem for serious consideration.

Individual white folks have from the earliest times taken care of certain individual colored persons in whom they are personally interested. Health authorities, however, find it necessary to take cognizance of health conditions among all colored citizens.

It is important that health workers and all civic organizations should get a bird's-eye view of the health problems which beset especially that part of our citizenship from which is drawn our household servants—the cook, the maid, the nurse, the butler—and to a great extent our industrial laborers.

Below is given a statement of the Surgeon General of the United States Public Health Service on the health problem of the American negro:

"The varying status of the physical well-being of the American negro, according to place and kind of residence, urban or rural; kind of employment, agricultural or industrial; and opportunities for enlightenment and self-help, education and leadership, underlies a drama too intricate and too prolonged in its unfolding to relate here with any considerable measure of detail. Therefore, just a few more or less general statements will be made presenting this major health problem and describing the program which has the most reasonable and most practical solution of the problem as its objective.

"There is an excess of deaths and sickness among the colored people of America as compared with the white population of the nation and, consequently, these rates for the colored population are above the average for the country. This statement can be generally accepted without the presentation of available scientific and unbiased

facts and figures which give a definite measure of the proportions and distribution of these excesses.

"There is evidence, also, in the bookkeeping of colored lives in America, of the great cost of survival and growth of the negro family and community. The *gross birth rate* of this people of large families is reduced to a *small net increase* by the excessive mortality which destroys first the babies (and often the mothers at birth) and, then, the survivors in the successive age groups, except in the last group which exhibits a few phenomenal, and oft-times legendary, centenarians.

"The *number of deaths* among colored people is approximately *one and two-thirds* the number for a like number of white people in the nation at large, and in some communities, urban and rural, this ratio is even higher. This presents a real problem calling for attack on the causes, and for education, relief of poverty (said by some to be 'the direst disease'), and adjustment to new, congested, and intensive modes of living."

In considering negro health it will not be amiss to refer to specific diseases.

**Tuberculosis:** In Alabama, fully *three* times as many negroes as white persons die of tuberculosis. We are all familiar with the oft repeated explanation that this disease was unknown among negroes in Africa and for this reason they have acquired no natural immunity or resistance to the disease. We know also that insanitary surroundings, overcrowded quarters, and unhygienic habits of living, especially the habit of inadequate or improper food intake, contribute their quota to the spread of tuberculosis.

Those who are able to do so *may* draw comfort from the thought that a few centuries of continued ravaging of the negro race by the white plague will probably give them a racial immunity equal to that of the white race, but even that is less than we could wish. A disturbing thought intervenes of those years with the colored race living close beside us and in our families, falling victim in greater and greater numbers to the great white plague and scattering among wider and wider circles of both races the infective material which emanates from every open case of tuberculosis.

**Venereal Disease:** Deaths from *venereal* disease are *ten times* more frequent among negroes than among white persons in Alabama. This constitutes a health problem of great proportions. A survey as

to the prevalence of syphilis among rural negroes was recently made by the Bureau of Preventable Diseases; 3,603 individuals of all ages were given the blood test for this disease. 36 per cent. had positive reactions. Treatment was made available to these cases. There was a reversal of the blood test in 56 per cent. of cases treated.

Approximately twice as many negro women as white women died at maternity. This, as well as the excessive rate of stillbirths and miscarriages, is undoubtedly due to venereal disease.

Pellagra: Pellagra caused more than twice as many deaths of negroes as occurred among white persons. The inclusion of milk and green vegetables in the diet will prevent deaths from pellagra.

Typhoid Fever: Typhoid kills almost twice as many negroes as whites. It would seem that insanitary environment is more than twice as prevalent among them.

Malaria: The malaria control program of the State Board of Health has reduced the incidence of this disease to a low figure among both white and colored citizens.

Diseases of Childhood: Among the so-called communicable diseases of childhood, whooping cough takes the heavier toll among the negro children, but, with diphtheria, the relative position is reversed. More than twice as many white children die of diphtheria as colored children.

Smallpox: Smallpox has been approximately wiped out by vaccination. However, a recent survey of schools in the United States shows that only 21 per cent of all city children and but 7 per cent of all rural children have been protected against smallpox.

Negroes seem to live a happy, care-free life and to be less susceptible to anxiety and depression than their white neighbors. An evidence of this is seen in the fact that ten white persons committed suicide to one negro. Our negro homicide rate is four times that of the white. In the majority of cases, they are killed in quarrels among themselves. The accident rate is also higher amongst the negro, due probably to more general exposure in the industries.

These losses account for the fact that the life expectancy of the American negro is shorter by *ten years* than that of the white man, and with these vital losses of the negro must be included also the toll in the

costs of sickness, with attendant unemployment, poverty, misery, and the cost of medical care.

Such is the problem. What of the solution?

Fortunately there need be no great fear—certainly no hysteria—concerning the health problem of the American negro. The wise use of knowledge and judicious use of practical agencies, tempered withal by an understanding sympathy, will make the American negro an asset alike to his own race and to his country.

The year-round program of the National Negro Health Week comprehends several avenues of approach to this problem. They are in part as follows: Co-operation with health officers and health agencies to ascertain facts and determine methods of procedure; contact with State and local negro organizations to secure interest in the problem and support of measures sponsored by the State and local health officers; the training and employment of negro public health nurses; physical education; and medical, dental, nutritional, and nursing services in the negro schools; and a constant campaign for an understandable and workable relationship.

In closing, attention is directed to the eighteenth annual observance of the National Negro Health Week, Sunday, April 3, to Sunday, April 10, 1932. All agencies and institutions—health, social, education, economic, church and welfare—are invited to participate.

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## BUREAU OF LABORATORIES

L. C. Havens, M. D., Director

### THE PATHOGENICITY OF THE PARATYPHOID GROUP

The virulence of certain bacteria or groups of bacteria is high under all conditions. Between those species which can be definitely classed as pathogenic and those which are always non-pathogenic lies a heterogeneous class of organisms which possess the capacity to invade living tissue and to produce disease only under special circumstances. In this respect the bacteria belonging to the paratyphoid group are particularly interesting.

This group, a better name for which is *Salmonella*—derived from Salmon who de-



scribed the first known species in connection with his work on hog cholera--includes at one end *B. paratyphosus A* which closely approximates *B. typhosus* as a pathogen. At the other end lie *S. suipestifer* and *S. enteritidis* which are rarely associated with disease in man, but may be pathogenic for other animals. The two types of paratyphoid B, *S. schottmulleri* and *S. aerrycke*, fall between these extremes, the former being responsible for clinical paratyphoid fever, while the latter is a common cause of food poisoning.

In this group also belongs Morgan's bacillus whose capacity for disease production has been debated ever since its discovery by Morgan<sup>1</sup> in 1906. This investigator found it present in the feces of infants suffering from diarrhea and dysentery and was able to produce diarrhea in monkeys with these strains. Other investigators found it frequently in the stools of normal children and, in fact, widely distributed in nature<sup>2</sup>. It has been reported in many animals and also in water and soil. This wide distribution naturally cast doubt on its pathogenic nature, although reports have, from time to time, appeared of infections where the etiologic relationship of *S. morgani* could hardly be questioned<sup>3</sup>.

The State Board of Health, during the last two or three years, has had occasion to investigate some fifty cases of clinical paratyphoid fever, in which the only significant organism found was the bacillus of Morgan<sup>4</sup>. All tests and examinations for *B. typhosus* and *paratyphosus A* and *B* were entirely negative. The clinical course was characteristic of mild typhoid fever, except that the onset was usually abrupt and the convalescence more rapid. The duration was about two weeks, with continued fever (102-104). From six of these cases Morgan's bacillus was obtained in blood cultures. All of the cases had Mor-

gan agglutinins in significant titres and in 22 patients from whom a second specimen of blood was obtained, the titre increased during the course of the disease. D'Aunoy<sup>5</sup> has described similar cases.

There seems, therefore, to be no question that, under certain conditions at least, Morgan's bacillus is pathogenic. Whether it is only certain strains which possess invasive power or whether its virulence depends more largely upon special susceptibility on the part of the host, remains to be determined.

In view of its known occurrence in the feces of apparently normal persons, its isolation in stool cultures alone is insufficient proof of its etiological significance. It is probable that such persons may be considered to be healthy carriers. It is necessary, in order to prove that Morgan's bacillus is the cause of the clinical condition under observation, that its presence in the intestinal tract be supported by a positive agglutination test, or better, by a positive blood culture. It has been shown<sup>4</sup> that agglutinins for this organism rarely occur in normal persons and, therefore, a positive agglutination test with the patient's serum has considerable diagnostic significance. The clinician should consider this etiology in all cases of obscure fever of 10-14 days duration, not forgetting, however, that the organism has a wide distribution in nature, with the consequent necessity of supporting a report of its presence in the feces with evidence that it is causing a reaction on the part of the patient, as shown by the presence of agglutinins.

## BUREAU OF VITAL STATISTICS

W. T. Fales, Director

Ethel Hawley, Acting Director

### SUMMARY OF ACCIDENT DEATHS FOR 1930

In 1930 in Alabama, approximately one death in each eighteen was due to accident. The total deaths from accidents was exceeded by deaths from four causes only, heart disease, nephritis, pneumonia, and tuberculosis.

There were practically the same number of deaths from accidental causes as there were from typhoid fever, malaria, smallpox, measles, scarlet fever, whooping

5. D'Aunoy, R.: Am. J. M. S. 1929, 178, 834.

1. Brit. M. J. 1906, 1, 958.

2. Lovell, R.: J. Path. & Bact. 1929 32, 79; Kligler, I. J.: J. Exper. Med. 1919, 29, 531; Lewis: Great Britain Loc. Govt. Bd. Rpt. Med. Suppl. 1912, 13, App. B., No. 3, p. 375.

3. Riding, D.: Brit. M. J. 1927, 1, 183; Thjotta, T.: J. Infect. Dis. 1928, 43, 349; Magath, T. B. and Jackson, E.: M. Clin. N. Amer. 1925, p. 1381; Fay, J. F.: Med. Pract. 1920, 104, 466; D'Aunoy, R.: Am. J. M. S. 1929, 178, 834.

4. Havens, L. C. & Mayfield, C. R.: J. Prev. Med. 1930, 4, 179.

cough, diphtheria and pellagra, combined, and still we seldom think of including accidents as one of our public health problems.

Of the total of 1,723 deaths from accidental causes in 1930, 610 or 35 per cent were due to accidents in the home. Almost a third of these home accidents were caused by burns, with falls standing second.

Four hundred and ninety-one accidental deaths, or 29 per cent of the total, were due to automobile accidents. Deaths from automobile accidents have increased ten-fold since 1917, while deaths from other types of accidents have shown a substantial decrease. This decrease is particularly noticeable in industrial accidents. Today only 15 per cent of all accidents occur in industry. This good showing is largely due to the intensive campaign in accident prevention that is being constantly waged by the large industrial concerns.

What has been done in industrial accidents can be done for other accidents if communities can be brought to realize that it is as much to their discredit to have a high accident rate as it is to have a high death rate from typhoid fever or malaria.

The following data on nature of accidents in Alabama in 1930 are interesting:

*Deaths from Accidents, Alabama—1930*

Falls .....	161
Burns .....	189
Burning building .....	38
Asphyxiation .....	47
Poison .....	50
Cuts .....	12
Firearms .....	56
Drowning .....	10
Other .....	47

Total Home Accidents..... 610

Machinery .....	20
Vehicles .....	25
Explosions and burns.....	38
Fall of persons.....	30
Falling objects .....	77
Animals .....	15
All other .....	57

Total Industrial Accidents..... 262

Collision with pedestrian.....	145
Collision with other motor.....	70
Collision with railroad train.....	25
Collision with electric car.....	6
Collision with fixed object.....	27
Non-collision operating .....	146
All other .....	72

Total Motor Vehicle Accidents..... 491

Total other public..... 353

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### A 1932 COUNTY PROGRAM AGAINST TUBERCULOSIS

Tuberculosis and its control demands the united co-operation of all the agencies in a county if any inroads are to be made in its annual toll. Naturally, much of the work in this fight falls on the county health department but the health department alone, without the support of the medical profession, can do little. Similarly, the public must be informed as to the prevalence and danger of tuberculosis and as to the usual means of spread. They must know that an early diagnosis cannot be made in all cases even by an expert without the aid of tuberculin testing and the x-ray. Contacts of persons suffering from chronic respiratory disease are most likely to develop the disease, hence this group should be taught to seek examination.

The program of control must of necessity extend over many years but as objectives for this year in a progressive program the following have been proposed:

1. Three cases reported for each death.
2. Three or more diagnostic clinics during the year.
3. Every patient attending clinic referred by a doctor.
4. Every doctor in the county referring patients (certain specialists excepted).
5. Proper sputum disposal in every open case.
6. All contacts of every positive case tuberculin tested and all positive reactors examined.
7. Two papers on tuberculosis presented to the county medical society.
8. Three papers on tuberculosis presented to lay organizations (e. g., P. T. A.) by local doctors.

## BUREAU OF INSPECTION

C. A. Abele, Director

### MILK AND PUBLIC HEALTH

*Report of the Committee on Milk Production and Control of the White House Conference*

Copies of the Preliminary Report of the Committee on Milk Production and Con-



trol of the White House Conference on Child Health and Protection have recently been mailed to all county health officers in whose counties milk quality control activities are being conducted. This report was presented to the Conference in November, 1930; but it has not been available in printed form for distribution until quite recently.

The report takes up, in order:

1. Communicable Diseases Transmitted Through Milk, with tabulations of the numbers of milk-borne epidemics, cases, and deaths since 1924, and charts showing that most of these epidemics have occurred in communities of less than 2,500 population, and in those having 10,000 to 24,999 inhabitants. It is also shown that a definite relationship exists between the percentage of milk pasteurized and the rates of infant mortality from diarrhea and enteritis. Brief discussions of the etiology and control of the several milk-borne diseases are also given.

2. Public Health Supervision of Milk Supplies, in which are discussed the essential elements of this activity, fundamental items to be included in milk control legislation, the evaluation of the results of milk control activities, the present status of milk control activities in the United States, and recommendations for the further improvement of the public health supervision of milk supplies.

3. Nutritional Aspects of Milk, wherein the hardness or toughness of the curd, vitamin content, calcium-phosphorus balance, the role of colostrum, and data concerning condensed, evaporated, and dried milk are discussed.

4. Economic Aspects of Milk, including discussions of the consumption of fluid milk, cream, and other milk products, the production, marketing, transportation, processing, and delivery of milk, and a discussion of the economic gain to be achieved by the production of milk of high sanitary quality.

Highlights of the general conclusions and recommendations are:

"The best information available indicates that approximately a quart of milk, or its equivalent in other dairy products, is desirable daily for the average growing child." (In Alabama communities the average per capita consumption in 1930 was 0.6 pint daily.)

"There is ample evidence that milk is an important factor in the transmission of certain communicable diseases unless it is properly produced, processed, and distributed. A study of the reported outbreaks of communicable diseases attributable to milk in the United States indicates that the largest number occur in the smaller communities in many of which the milk supply is not properly supervised and in which the percentage of milk pasteurized is small."

"There is need for further improvement in the public health and quality supervision of the milk supply of this country." (The effectiveness of raw milk control in 80 per cent of the Alabama

communities, and of pasteurized milk control in 85 per cent, was greater than the average of 247 cities enforcing the Standard Milk Ordinance.)

"Inasmuch as the laws and regulations relating to the public health supervision of milk supplies deal only with measures which are designed primarily to protect the public health, they should, when practicable, be made the function of health authorities, local, State, and Federal. The public health supervision of municipal milk supplies should obviously be the function of governmental departments primarily dedicated to the public health point of view and technically trained in the recognition of all public health aspects of the problem."

"In the absence of local milk control, the State must assume this responsibility."

"Health authorities should recommend to American milk consumers that the general market milk be pasteurized before it is consumed, either in a properly supervised pasteurization plant or at home."

## BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

### AN INTERPRETATION OF MODERN PHASES OF THE PROBLEM OF MATERNAL MORTALITY\*

The normal human American mind is disposed to look upon the bright side of every personal problem; this is especially true of the paternal attitude toward a wife's pregnancy. The pregnant wife usually adopts the point of view of her "men-folks" or strives to do so. A hopeful and courageous attitude of mind is perhaps in itself a most valuable asset for safety of the child-bearing woman; but unsupported by scientific medical supervision during pregnancy, expert service at delivery and painstaking after-care, a certain percentage of cases will, as we have seen, meet preventable disaster.

Fortunately, perhaps, a mere statement of figures does not terrify anybody but statistically-minded public health workers who see the problem in round numbers as 16,000 dead mothers, 12,000 of whom might have been saved by adequate medical attendance; 89,000 dead-born babies, 70,000 of whom might have been born alive, had their mothers received adequate medical supervision during pregnancy.

If child-bearing were an occasional enterprise instead of an almost universal one

\*Second of a series of three articles dealing with maternal mortality. The first appeared in the February Journal.

among young married women, there might perhaps be less occasion for public concern. In Alabama the records show that in any one year of the past decade at least 15 per cent of the female population, of suitable age, were child-bearers. Looking the decade through, it is impossible to estimate the relative proportion of this population group which was so engaged, but it is easy to see how child-bearing in its cumulative aspects becomes "big business" for the weal or woe of civilization.

The average man and his wife are not entirely unmindful of the hazards of maternity but they wish to guard first of all their peace of mind and the comfortable aspects of their everyday existence. The average man perhaps sees a close analogy between the hazards of maternity and the hazards of motor transportation which are constantly increasing and furthermore apply to every member of the family. The average man will insure his automobile and his life against accident; he will have himself and his family immunized against communicable diseases by inoculations approved by health authorities. But when it comes to guarding against the hazards of maternity, it seems to the average man and his wife that there is no "hocus pocus" which can be resorted to for immunization against the disasters incident to this experience.

Aside from trusting to luck there is only the alternative of constant, consecutive and intelligent thought and action coupled with expenditure of monies for which there is no claim of assurance against anything.

Contemplation of the hazards of maternity tends to unsettle the digestive functions of the average man and his wife more even than pregnancy itself; hence they are prone to "let nature take its course" and close their eyes to the dangers which modern medical science might overcome.

The family physician, recognizing the importance of mental hygiene in these cases, and perhaps also, recognizing the immutability of fate, is prone to encourage and confirm the mental attitude of the average man and his wife.

Mr. and Mrs. Average Alabamian absolutely refuse to be impressed by the hazards of maternity. They know too much arithmetic and have too much confidence in their own powers of reasoning. The rea-

soning goes something like this: "Well, well, even if the worst is true, which I can't believe, it seems that my Maggie has at least 99 chances out of a 100 to come through with flying colors. Maggie always was a lucky girl; look at how she hooked me. I'd rather trust to our good luck than to Auntie Doleful's warnings." Maggie also adopts this comfortable viewpoint. She drives a car. She will stay in the open. She ruminates:

"People are killed in automobile accidents, too, but I'll not let that scare me either. The car is insured against hurting somebody else and as for me, I'd rather be dead already than quaking in terror and poverty of spirit."

Maggie visits her doctor and confides her courageous attitude of mind to him. He pats her on the back and chuckles blandly, "That's what I call mental hygiene!" Then, to find out whether it will be a boy or a girl, Maggie drives forty miles into the country to consult a fortune teller. This illiterate woman lives in a three room shack approached by rickety front steps which are a menace to any but the physical fly-weights who commonly seek such occult guidance on the mysteries of love and marriage.

Maggie will approach the last long hazardous mile of her child-bearing journey, comforted by the occult jargon of an illiterate fortune teller and upborne by the bland complacency of her physician. He knows that a full measure of safety for the child-bearing woman can only be achieved through the intelligent participation of the family, the patient and the community but he also knows that the average family, patient and community expect a "Kind Providence" and a "good doctor" to do it all—so he will do what he can.

In this interpretation I am trying to say simply that the oldest social problem known to man, the problem of excessive maternal and infant mortality, has never been adequately interpreted to the rank and file of our citizens, and in spite of considerable success which has been gained in combating the problem in urban areas, no workable plan has been evolved which can be successfully applied throughout large rural states to increase the joy and security of women in maternity and add to the heritage of infant days that give promise



of fulfillment in future years. A Better Plan is needed. What Shall Go Into It? Who Shall Build It?

## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

### FLEAS AND THEIR CONTROL\*

Contributed by C. C. Kiker, Assistant Sanitary Engineer

This article is prompted by the question often asked, "How may I rid my premises of fleas?" The desire for specific information is understood when it is stated that fleas have been known to render houses uninhabitable for a time and to cause considerable loss among poultry as well as annoyance to domestic animals.

While certain species of fleas are known to transmit bubonic plague as well as infantile kala-azar and are under investigation in the transmission of typhus fever, these diseases are absent or rare in the United States at present. We shall, therefore, deal here with the control of fleas as pests rather than transmitters of disease.

Of the many known species of fleas only a few are of interest as pests to man or domestic animals. These are commonly known as the human flea, cat flea, stick-tight flea or chicken flea and the rat flea.

Some knowledge of the life and habits of fleas will make the control methods more easily understood. A brief description of these factors follow. Nearly all species have one host upon which they prefer to live, but may occasionally be found upon other animals. The different species vary in the intimacy with which they are associated with their host. For instance, the chicken flea has the habit of remaining attached to its host, while the dog flea remains on the animals constantly, but is not attached and feeds only at intervals. The human flea remains on man but little.

There are four distinct stages in the life of a flea. These are the egg, larva, pupa, and adult.

The female fleas deposit their eggs while on the animal. As the eggs are not attached, they fall out in the nest or resting place of the animals. Hatching takes place

in from two to twelve days. The larvae feed upon various animal and vegetable matter. Between four days and several months after hatching the larva spins a cocoon in which it transforms to a pupa. The pupa remains in the cocoon for a period which may range from three days to more than a year.

The complete life cycle of the flea may take place in as short a period as seventeen days or under unfavorable conditions may extend over a year. The average length of life of the adult flea varies between a few days to several months.

There are two general steps in flea control applicable to nearly all species. They are: (1) the destruction of the adults on the host, and (2) the destruction of the eggs, larva, and pupa found in the breeding place.

Adult fleas on cats and dogs may be destroyed by washing them thoroughly in a tub containing the proper solution of a saponified coal-tar creosote preparation. There are a number of these preparations on the market known as stock dips. There are other means and preparations for destroying adult fleas on animals among which are specially prepared commercial soaps, the washing with a kerosene emulsion solution\*, dusting with naphthalene or pyrethrum powder, etc. Adult fleas on fowls may be killed by applying carbolated vaseline to the clusters of fleas. The mixture of 1 part kerosene and 2 parts lard may also be used.

When fleas are very numerous it would be advisable to kill as many adults in the infested area as is possible. This may be accomplished by spraying the area, whether underneath the house, in the barn, chicken house, or feed lot with creosote oil. A light spraying will suffice.

The next step in the control is to destroy the immature fleas. Breeding takes place in the dust and loose material found underneath houses, under rugs and cracks in houses, and in chicken houses and barns. As much of this material as possible should be removed and burned. A deliquescent salt, such as common salt, should then be

\*Farmers Bulletin No. 897 of the United States Department of Agriculture has been used freely in the preparation of this article.

\*Formula:—Dissolve 2 oz. of washing soap in 1 quart of hot water and when brought to boil remove from fire and add 2½ pints of kerosene. Agitate the mixture violently with an egg beater. A milky mass should result from which the oil does not separate. Water added to make 5 gallons.

scattered about and thoroughly wet down. Additional wettings will make the measure more effective. While flea larvae require some moisture, excessive wetting will result in their destruction. In place of moisture held by the deliquescent salt, liberal amounts of crude oil sprinkled over the area has been reported to be effective. Chlorinated lime has been used to advantage in the same way.

In household infestations, it is advisable to remove the rugs and thoroughly sweep the floors. The accumulation should be burned. The floors should then be scrubbed. Before the rugs, which should be cleaned and aired, are replaced the floor should be sprinkled with flake naphthalene or pyrethrum powder—taking care that all cracks are filled.

Another and less troublesome method of destroying fleas in the house has been tried and recommended. Scatter five pounds of flake naphthalene over the floor of an infested room and close the doors and windows tightly for 24 hours. Additional rooms may be treated on subsequent days using the naphthalene applied in the first room.

Fumigation of houses will kill fleas as well as other insects and vermin.

## CURRENT STATISTICS

State Department of Health

### \*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1931 Dec.	1932 Jan.	Total Cases to Date This Year Last Year	
Typhoid	72	79	79	33
Malaria	87	65	65	57
Smallpox	2	194	194	14
Measles	73	39	39	1945
Scarlet Fever	207	183	183	293
Whooping Cough	19	118	118	57
Diphtheria	263	193	193	195
Tuberculosis	302	351	351	343
Pellagra	54	16	16	12
Meningitis	6	8	8	16
Tetanus	2	5	5	1
Influenza	83	324	324	681
Dengue	0	0	0	0
Poliomyelitis	11	4	4	3
Pneumonia	202	325	325	605
Chickenpox	133	183	183	458
Mumps	28	127	127	150
Encephalitis	3	2	2	4
Ophthalmia Neonatorum	1	2	2	4
Typhus	11	6	6	3
Trachoma	0	0	0	0
Tularemia	1	4	4	2
Undulant Fever	4	0	0	1
Rabies	0	0	0	0
Syphilis (private cases)	111	159	159	133
Chancroid (private cases)	0	7	7	6
Gonorrhea (private cases)	125	154	154	136

\*As reported by physicians and including deaths not reported as cases.

## PROVISIONAL MORTALITY STATISTICS Alabama, December 1931

	Number of Deaths Registered Dec., 1931			Annual Rate per 100,000 Population		
	White	Black	Total	Dec. 1931	Dec. 1930	Dec. 1929
ALL CAUSES	1198	1108	2306	1009.4	1261.6	1294.3
Typhoid fever	4	8	12	5.2	8.4	3.1
Smallpox						
Measles		2	2	0.9	4.0	0.9
Scarlet fever	2		2	0.9	1.3	3.1
Whooping cough	1	3	4	1.7	4.0	6.3
Diphtheria	23	10	33	14.4	16.8	13.0
Influenza	39	26	65	28.4	41.6	56.8
Pneumonia, all forms	101	89	190	83.2	104.0	126.7
Poliomyelitis	2		2	0.9	0.9	0.9
Tetanus					1.3	0.9
Tuberculosis, all forms	73	112	185	81.0	100.0	87.7
Tuberculosis, pulmonary	63	103	166	72.7	92.1	76.5
Malaria	4	9	13	5.7	10.2	10.7
Cancer, all forms	75	34	109	47.7	62.0	52.4
Diabetes mellitus	13	14	27	11.8	9.3	9.8
Pellagra	10	10	20	8.7	20.8	21.0
Cerebral hemorrhage, apoplexy	80	55	135	59.1	75.7	66.2
Diseases of heart	174	106	280	122.5	130.6	155.3
Diarrhea and enteritis						
Under 2 years	14	10	24	10.5	12.4	13.0
2 years and over	5	7	12	5.2	8.4	3.1
Chronic nephritis	98	89	187	81.8	104.0	122.6
Puerperal state, total	19	12	31	13.6	22.6	15.2
Puerperal septicemia	5	1	6	2.6	6.2	3.6
Congenital malformation	10	7	17	7.4	4.9	5.8
Congenital debility and other diseases of early infancy	68	43	111	48.6	67.7	64.9
Senility	11	27	38	16.6	23.5	24.6
Suicides	8	2	10	4.4	11.9	9.4
Homicides	17	25	42	18.4	23.9	20.1
Accidental burns	5	8	13	5.7	18.6	18.3
Accidental drownings	1		1	0.4	1.3	3.6
Accidental traumatism by firearms	5	15	20	8.7	9.3	7.2
Mine accidents	1	5	6	2.6	3.5	4.5
Railroad accidents	5	6	11	4.8	3.5	8.1
Automobile accidents	31	12	43	18.8	23.5	15.7
Other external causes	34	11	45	19.7	24.3	30.9
Other specified causes	184	167	351	153.6	174.0	185.3
Ill-defined and unknown causes	81	184	265	116.0	133.2	123.1

## County Society News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

### AUTAUGA COUNTY

J. E. Wilkinson, Jr., Secretary

At a meeting held recently, the Autauga County Medical Society chose the following officers to serve during 1932: President, Dr. R. G. Shanks, Autaugaville; Vice-President, Dr. R. M. Golson, Prattville; Secretary-Treasurer, Dr. J. E. Wilkinson, Jr., Prattville. Dr. Golson was elected a member of the Board of Censors and Dr. Wilkinson, County Quarantine Officer.

### CHOCTAW COUNTY

A. D. James, Secretary

The Choctaw County Medical Society installed the following officers for 1932 at



its January 26 meeting: President, Dr. H. W. Robinson, Edna; Vice-President, Dr. T. M. Littlepage, Riderwood; Secretary-Treasurer, Dr. A. D. James, Choctaw. Drs. J. W. Rudder, Gilberttown, and F. E. Christopher, Bolinger, have been elected members of the Board of Censors, Dr. Christopher succeeding Dr. H. H. Mason, deceased.

#### DeKALB COUNTY

W. E. Quin, Secretary

Dr. W. T. Miller, Fort Payne, has been elected President, Dr. M. T. Floyd, Fort Payne, Vice-President, and Dr. W. E. Quin, Fort Payne, Secretary-Treasurer of the DeKalb County Medical Society for 1932. Dr. C. H. Richey, Valley Head, has been chosen to serve as a member of the Board of Censors.

The society has elected Dr. Lee Weathington, delegate; Dr. C. D. Killian, alternate; Dr. J. E. Buzbee, delegate; and Dr. M. T. Floyd, alternate, to the annual session of the Association convening in Mobile, April 19-22.

#### ELMORE COUNTY

W. S. Owsley, Secretary

At a meeting of the Elmore County Medical Society on February 9, the following officers were installed for 1932: President, W. M. Gamble, Wetumpka; Vice-President, E. P. Moon, Wetumpka; and Secretary-Treasurer, W. S. Owsley, Wetumpka. Dr. S. T. Cousins, Wetumpka, has been elected a member of the Board of Censors.

Drs. Parker and Rice of Montgomery were guests of the society at its February 9 meeting, Dr. Parker contributing a paper on Congenital Syphilis.

The County Board of Health has adopted the State Board of Health's regulations governing the production, handling and sale of milk and certain milk products.

#### LAUDERDALE COUNTY

W. D. Hubbard, Secretary

A patient with alopecia areata was presented to the society on January 5, and the use of pituitary extract in treatment of the condition discussed.

#### LAWRENCE COUNTY

R. E. Harper, Secretary

Drs. H. C. McCullough, Town Creek, and J. F. Huey, Hillsboro, have been elected

delegates to the annual meeting of the Association; Drs. J. P. Dyar, Moulton, and J. A. Ussery, Courtland, were chosen alternates.

#### LIMESTONE COUNTY

W. J. Donald, Secretary

J. S. Crutcher, Athens, has been elected President; W. E. Maples, Vice-President; and W. J. Donald, Secretary-Treasurer of the Limestone County Medical Society for 1932. Dr. M. W. Dupree has been re-elected a member of the Board of Censors.

Delegates and alternates chosen to represent the society at the Mobile session follow: Dr. W. E. Maples with Dr. W. J. Donald as alternate; Dr. D. G. Estes with Dr. A. D. Powers as alternate.

Dr. W. J. Donald has returned to his position as county health officer after a six months' leave of absence.

#### MADISON COUNTY

J. D. Holliman, Secretary

At the regular meeting of the Madison County Medical Society on February 9, Dr. Hollis Johnson of Nashville read a paper on Artificial Pneumothorax in the Treatment of Tuberculosis. Dr. Hugh Boyd, Scottsboro, reported a case of Rocky Mountain spotted fever.

Dr. F. B. Wilson, Huntsville, who expects to return in April to his practice after a winter in Florida, has been re-elected a member of the Board of Censors.

#### MARSHALL COUNTY

Hugh Awtrey, Secretary

Dr. A. W. Graves, Gadsden, presented a paper on Symptomless and Painless Hematuria to the society at its February meeting. X-ray pictures were used to illustrate the paper. Drs. J. O. Morgan, L. B. Nicholson and F. W. McCorkle of Gadsden were guests of the society.

Drs. T. E. Martin and J. W. Boggess, Jr., have been elected delegates to the Mobile session of the Association.

#### MONTGOMERY COUNTY

J. L. Bowman, Secretary

Dr. Thurston D. Rivers, for some months on the staff of the Division of Tuberculosis Control of the State Department of Health, has resigned his position to become associated in practice with Dr. R. S. Hill, Montgomery.

## SUMTER COUNTY

J. S. Hough, Secretary

The following have been elected officers of the society for 1932: President, Dr. R. D. Spratt, Livingston; Vice-President, Dr. W. E. Allen, Ward; Secretary-Treasurer, Dr. J. S. Hough, Livingston.

Dr. Spratt has been elected County Physician and Dr. Hough, County Health Officer.

## TALLADEGA COUNTY

J. H. Hill, Secretary

The Talladega County Medical Society was host to the Northeastern Division of the Association at its winter meeting in Sylacauga on January 19. Vice-President, W. M. Salter, presided. A paper on Agranulocytosis by Dr. J. D. Durden, Anniston, was discussed by Drs. Dabney, Harrison, and Seale Harris, Birmingham, and by Dr. J. M. Whiteside. R. C. Young, D. D. S., read a paper on "The Relation of Dentistry to Obstetrics". It was discussed by Drs. J. P. Stewart, Hill, and Salter. Dr. Toulmin Gaines presented a paper, "A Review of Radicalism in Our Organization", which was discussed by Drs. Harris and Harrison. Dr. M. Y. Dabney dealt with "A Reliable Diagnosis of Pregnancy".

Luncheon was served by the ladies of the Methodist Church.

## Book Abstracts and Reviews

**Nervous Indigestion.** By Walter C. Alvarez, M.D., Associate Professor of Medicine, University of Minnesota (The Mayo Foundation). Paul B. Hoeber, Inc., publishers. New York. 1930. 284 pages. Cloth. \$3.75.

A few years ago, the author of this book published two brief papers. Friends, physicians and patients liked them so much that the supply of reprints was soon exhausted. Repeated requests for reprints inspired the author to expand these papers and publish them in book form. "Nervous Indigestion" was the result. Unfortunately, the title was poorly selected. The book might be called "The Treatment of Functional Diseases", "The Handling of Neurotic Patients", or "Physical Manifestations of Hysteria", for the book deals primarily with the neurotic patient and secondarily with his digestive symptoms. The pathologic basis for the digestive upsets on a purely nervous basis is well brought out in the chapter on "The Influence of the Emotions on Digestion". The necessity of ruling out organic disease is well brought out in the chapter on diagnosis. The methods of treatment are well described in a chapter on handling the patient.

Alvarez reminds us of the poor treatment usually accorded the neurotic patient. The general practitioner is too busy to listen to his long list of complaints. Confronted daily by patients suffering from more serious disease but bearing up bravely in the face of pain and suffering and even death, he has little sympathy for the fidgety individual who is physically sound but just a bundle of nerves. The neurologist is too interested in paralyzes, anesthetics and altered reflexes to become interested in his problem. The psychiatrist is too quick to classify him as psychotic. The surgeon too frequently adds another wound to his already scarred abdomen. And yet these patients need some prop on which to lean for strength and often the quack, the charlatan, the osteopath, chiropractor, or neuropath eventually gets the patient and sometimes cures him—to the chagrin and disgrace of the medical profession. Alvarez says that the physician who is unwilling to devote to such patients the time necessary to get results should send them to a colleague who can spare the time. The younger practitioner of medicine would be wiser if he became familiar with the method of handling these patients for certainly he has an opportunity to make close friends and ardent admirers of these people.

This volume should, therefore, fill a need in the library of every physician. It is interesting, written in literary style, and can be read through in a few hours. The physician who handles nervous patients might put this book into their hands where it would do more good than would a prescription for a carminative or an alkali.

C. K. W.

**United States Army X-Ray Manual.** Rewritten and edited by Lt. H. C. Pillsbury, M. C., U. S. A. Paul B. Hoeber, Inc., publishers. New York. 1932 2nd Edition, 482 pages. Illustrated. \$5.00.

The first edition of this Manual published in 1919 and used throughout the World War has long been a favorite with those desiring a fundamental knowledge of the theory of x-ray. The fact that it was written for the army and for the field service limited its usefulness to civilians. Most of these objections for its civilian use have been removed in the second edition, for, as the author states in his preface, "Today the radiologists of the army have the same problems as their colleagues in civil life".

Chapter I on X-ray Physics is worth the study of anyone attempting to use an x-ray machine. It is a concise and clear exposition of a most difficult subject. Chapters on Dangers and Protection, on Fluoroscopy and on Technique are excellent. The chapter on Localization is of unquestionable value but will probably be found too narrow in its scope and too technical in its application to attract any but the specialist. Probably one of the most useful chapters in the book is that on Bones and Joints. Chapters on the X-ray of Sinuses and Teeth may discourage the casual user of the x-ray apparatus because of technical and interpretative difficulties. It can not be said, however, that the writer has magnified the difficulties. The chapter on Thoracic Viscera is too brief for so important a subject. His opinion on the X-ray Diagnosis of Childhood Tuberculosis is too conservative.



Radiography of the Urinary Tract is briefly stated, with a full description of the technique of intravenous pyelography. Many illustrations add to the value of the chapter on the Gastro-Intestinal Tract.

This book offers the physician who is doing his own general x-ray work a simple, concise compend of the entire field. It can not, of course, be considered exhaustive in any branch, but the fault of brevity is, at the same time, its virtue.

Lt. Col. Pillsbury is to be congratulated on his conservative and modest attitude in his claims with regard to radiological diagnosis. The publishers have co-operated with the author most admirably to make a practical and useful volume.

T. D. R.

**Female Sex Hormonology, a Review.** By William P. Graves, A.B., M.D., F. A. C. S. Professor of Gynecology at Harvard Medical School; Surgeon-in-Chief to the Free Hospital for Women and to the Parkway Hospital, Brookline. W. B. Saunders, publishers. Philadelphia and London. 1931. 130 pages. \$3.50.

During the past thirty years, rapid advances have been made in the solution of the problem of the relation of the glands of internal secretion to the female sexual and reproductive cycles. The author of this book has condensed into eighty pages a summary of the present knowledge of the subject. The two hormones of the ovary, folliculin and progestin, and the two sex hormones of the anterior pituitary, Prolan A and Prolan B, and the oxytocic principle of the posterior lobe of the pituitary have been isolated in pure form and their effect upon the reproductive function has been studied in detail. The theories regarding menstruation, parturition, and lactation have been completely revised in the light of the newer knowledge. Up to date, the clinical application of all these facts has not yielded significant findings, but it is likely that upon a basis of knowledge gained in the laboratory, practical therapeutics will develop. A knowledge of the scientific principles and experimental data included in Graves' book will serve as a basis for a better understanding of the therapeutic studies which will undoubtedly flood the literature in the near future. This book is written simply and concisely and is stripped of unnecessary and confusing detail. Frank's book on the female sex hormone is more detailed but it is not so recently printed and contains none of the work on the pituitary hormone.

C. K. W.

**Allergy and Applied Immunology.** A Handbook for Physician and Patient, on Asthma, Hay Fever, Urticaria, Eczema, and Kindred Manifestations of Allergy. By Warren T. Vaughan, M.D. C. V. Mosby Company, publishers. St. Louis. 1931. 359 pages with 37 illustrations. Price \$4.50.

Vaughan's book like that of Balyeat is written primarily for the patient suffering from some allergic disease and serves as an excellent manual of instruction for the patient. In few diseases is it so essential for a patient to understand in detail the factors which influence the course of his illness. The most valuable chapters in this book are those dealing with the various allergens and the many forms in which they appear, as for example the presence of horse hair in pillows, up-

holstery, automobile cushions, mattresses, blankets and padding for clothing. The chapters on food allergens, elimination diets and food diaries are very practical. There is also an excellent chapter of instructions to be given to the allergic patient.

The illustrations of the plants causing hay-fever are quite good. Balyeat's book contains better illustrations of the animals whose emanations cause asthma and is more simply written and as practical as Vaughan's book except that Vaughan's description of the food allergies is more practical than any other which has come to the reviewer's attention.

The physician who treats allergy occasionally will learn much from this book and the specialist will find it valuable to place in the hands of his patients.

C. K. W.

## Truth About Medicines

### NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

**Antimeningococcic Serum Polyvalent.**—An antimeningococcus serum (New and Nonofficial Remedies, 1931, p. 355) marketed in packages of one double-ended vial containing 15 cc., and in packages of two double-ended vials each containing 15 cc. United States Standard Products Company, Woodworth, Wis.

**Phenobarbital Sodium.**—Sodium Phenylethylbarbiturate. — The monosodium salt of phenylethylbarbituric acid. The actions and uses of phenobarbital sodium are the same as those of phenobarbital. For hypodermic injection, phenobarbital sodium is used in the form of 20 per cent. solution.

**Phenobarbital Sodium-Gane and Ingram.**—A brand of phenobarbital sodium-N.N.R. It is marketed in the form of tablets containing 1½ grains. Gane and Ingram, Inc., New York.

**Sterile Solution Skiodan** (4 per cent. by volume).—Each cubic centimeter contains skiodan (New and Nonofficial Remedies, 1931, p. 779), 0.4 Gm. Winthrop Chemical Co., Inc., New York.

**Brucella Melitensis Vaccine.**—A bacterial vaccine obtained from *B. melitensis* (*B. abortus*), proposed for use in the treatment of undulant fever caused by the organism commonly known as *Brucella abortus* and

not by the organisms coming from the goat.

**Brucella Melitensis Vaccine-Lederle.**—**Brucella Abortus Vaccine.**—A heat killed suspension of *Brucella melitensis* organisms (2,000 million per cubic centimeter). The product is marketed in packages of one 5 cc. vial. Lederle Laboratories, Inc., Pearl River, N. Y. (Jour. A. M. A., February 6, 1932, p. 479.)

**Sodium Iodobismuthite.**—Sodium bismuth iodide.—A compound formed by the interaction of bismuth chloride and sodium iodide in ethyl acetate solution, consisting essentially of hydrated sodium iodobismuthite (sodium bismuth iodide) with inorganic salts. It contains approximately 21 per cent. bismuth, 62 per cent. iodide and 11 per cent. water of hydration. This bismuth preparation is claimed to have the quality of appearing in the spinal fluid and of penetrating the brain tissue

**Iodobismutol.**—A solution of sodium iodobismuthite (sodium bismuth iodide) in ethylene glycol containing 0.1 per cent. acetic acid. Each cubic centimeter contains sodium iodobismuthite equivalent to 0.012 to 0.0138 Gm. bismuth and 0.109 to 0.129 Gm. sodium iodide. Iodobismutol seems to be well absorbed and to be excreted fairly rapidly. The claim is made for it that it will penetrate the brain in a great majority of persons treated. E. R. Squibb & Sons, New York. (Jour. A. M. A., February 13, 1932, p. 554.)

#### FOODS

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

**Jelke Good Luck Oleomargarine** (John F. Jelke Company, Chicago).—An oleomargarine of oleo oil, neutral leaf lard and acidulated milk solids (inoculated); equivalent to butter in vitamins A and D content; contains added salt. This oleomargarine is claimed to be suitable for cooking and table use and nutritionally equivalent to butter.

**Winter's White Sliced Bread** (Southern California Baking Company, San Diego, Calif.).—A sliced white bread made by the sponge dough method. It is claimed to be a bread of good quality.

**Knox-Jell.** A Gelatine Dessert (Charles B. Knox Gelatine Company, Johnstown, N. Y.).—Gelatin dessert preparations; containing sucrose, gelatin and citric or tartaric acid; colored with certified food color or vegetable color and flavored with terpeneless oil of lemon, lime, or orange, or raspberry or strawberry extracts. One package (1 pound 10 ounces) is claimed to make one gallon of dessert.

**Pixie Strained Celery Soup** (Fruit Belt Preserving Company, East Williamson, N. Y.).—Canned soup of sieved celery; containing in large measure the mineral and vitamin content of the raw celery used; contains a small amount of added salt. This product is recommended for infants, children, convalescents and special diets.

**Best's Bread** (The Best Baking Company, Inc., Oakland, Calif.).—A white bread made by the sponge dough method. It is claimed to be a bread of good quality. (Jour. A. M. A., February 6, 1932, p. 480.)

**Hygeia Pure Strained Peas** (The Snider Packing Corporation, Rochester, N. Y.).—Strained peas retaining in large measure the mineral and vitamin content of the raw peas used; with added vitamin D, 60 units per fluid-ounce; packed in jars. One fluid-ounce is claimed to be equivalent in vitamin D to the D content of one teaspoonful of cod liver oil. These peas are recommended for infants, children and convalescents and in special diets. They are claimed to be scientifically prepared to retain to a maximum degree, or so far as is possible by present commercial sieving and canning methods, the natural mineral and vitamin values of peas.

**Franck Tablets** (Heinr. Franck Sons, Inc., Flushing, N. Y.).—Roasted chicory root; ground and pressed into tablets. The roasted chicory tablets are suitable for addition to coffee beverage.

**Paul's Sandwich Bread** (Paul's Baking Corporation, Chicago).—A white bread made by the sponge dough method. It is claimed to be a bread of good quality. (Jour. A. M. A., February 13, 1932, p. 555.)

**Alice of Old Vincennes Tomato Juice** (Vincennes Packing Corporation, Vincennes, Ind.).—A pasteurized tomato juice



with added salt claimed to retain in high degree the vitamin content of the raw juice. This tomato juice is claimed to be a good source of vitamins A and B and an excellent source of vitamin C. It is suitable for infant feeding and for general table use.

"220" Bread (Korn's) (H. Korn Baking Company, Davenport, Iowa).—A white bread made by the sponge dough method. It is claimed to be a bread of good quality.

Borden's Oregon, Pearl, St. Charles, Maricopa and Silver Cow Brands Evaporated Milk (The Borden Company, New York).—Canned, unsweetened, sterilized, evaporated milk. These brands of evaporated milk are claimed to be suitable for general baking, cooking and table uses and in infant feeding. The mixture of equal parts of the evaporated milk and water is not below the legal standard for whole milk. The curds formed in the stomach are claimed to be smaller, softer and more readily digestible than those from raw or pasteurized milk.

Borden's Pure Orange Juice (Borden's Farm Products Company, Inc., New York).—An unsweetened, uncolored frozen orange juice packed in hermetically sealed half pint paper containers. It is claimed to be nutritionally equivalent to fresh orange juice and suitable for all the uses of fresh orange juice. It is packed in paper cartons for daily delivery to the final consumer.

Wolf's Bread (William Wolf's Bakery, Inc., Baton Rouge, La.).—A white bread made by the sponge dough method. It is claimed to be a bread of good quality. (Jour. A. M. A., February 20, 1932, p. 640.)

Hygeia Pure Strained Carrots (Snider Packing Corporation, Rochester, N. Y.).—Strained carrots retaining in large measure the mineral and vitamin content of the raw carrots used; with added vitamin D, 60 units per fluid-ounce; packed in jars. One fluid-ounce is claimed to be equivalent in vitamin D to the D content of one teaspoonful of cod liver oil. These carrots are recommended for infants, children and convalescents and in special diets. They are claimed to be scientifically prepared to

retain to a maximum degree, or so far as is possible by present commercial sieving and canning methods, the natural mineral and vitamin values of carrots.

U-Cop-Co Gelatines (Flaked and Granulated) (United Chemical and Organic Products Company, Chicago).—Granular and flake plain unsweetened gelatin; graded on the basis of jelly strength for special uses. U-Cop-Co Gelatines may be used in a wide variety of desserts, candies, salads, marshmallows, ice cream, jellied meats and other recipes and are valuable for many special diets.

Freihofer's 100 Per Cent. Whole Wheat Bread (The Freihofer Baking Company, Philadelphia).—A whole wheat bread made by the straight dough method. It is claimed to be a bread of good quality. (Jour. A. M. A., February 27, 1932, p. 737.)

#### PROPAGANDA FOR REFORM

Acriviolet Not Acceptable for N.N.R.—Acriviolet, manufactured by the National Aniline & Chemical Co., Inc., was first considered by the Council in 1925. At that time it was stated to be a mixture of equal parts of neutral acriflavine (acriflavine base) and gentian violet. The Council questioned the sufficiency of the clinical evidence for the product, and further consideration was deferred until satisfactory evidence should be presented. The manufacturers were informed of this action in March, 1926, and although they have been reminded of this request for additional evidence, no further reports on the clinical value of the preparation have been received. According to information received Acriviolet is now composed of: acriflavine, 50 per cent by weight; crystal violet, 25 per cent. by weight; methyl violet 2B, 25 per cent. by weight. Neither the label nor the slip accompanying a sample bottle states the composition of Acriviolet. The advertising and labels are uninforming and vague. The Council therefore declared Acriviolet unacceptable for New and Non-official Remedies because the composition is not declared on the labels nor in the advertising and because the evidence for its clinical usefulness is inadequate. (Jour. A. M. A., February 6, 1932, p. 480.)

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## TRACHEOTOMY TREATMENT OF PULMONARY SUPPURATION FOLLOWING REMOVAL OF NAIL

CASE REPORT\*

MURDOCK EQUEN, M. D.  
Atlanta

The lay press has made familiar to the public of today both the dangers of foreign bodies aspirated into the lung and the ease with which a trained bronchoscopist can remove them. The report of another case in medical literature demands some element of unusual interest. Treatment of pulmonary suppuration in such a case by repeated aspiration through a tracheotomy tube warrants an additional report. Moreover, it is important to remind the general practitioner that unresolved pneumonia may be secondary to a foreign body even though its presence be unsuspected.

### REPORT OF CASE

A boy, aged 3, entered the hospital, March 25, 1931, with the diagnosis of unresolved pneumonia, secondary to a nail in the tracheobronchial tree. When and how this nail had been aspirated could not be found out: the only history available was that the child had been ill with pneumonia of the lower right lobe for several weeks. Each case of unresolved pneumonia presenting a problem in itself, Dr. Homer Bruce, of Opelika, Alabama, began his research into the etiologic factor in this case with a roentgenogram of the lung. This showed a nail in the trachea extending into the main bronchus on the right, with consolidation of the right lower lobe. Dr. Bruce referred the child to me immediately.

On admission, the child seemed to be suffering great pain in the right side of the chest, and was breathing with difficulty. Nutrition and development were poor. There was dullness over the right lung with tubular breathing, and numerous rales of all kinds. The left lung was clear and the heart was normal. There was some cyanosis. Temperature was 101 degrees, and pulse 120. Hemoglobin was 60 per cent; red cells numbered 3,310,000, and white cells 29,000. Of the differential count, polymorphonuclears made up 73 per cent. A roentgenogram (Fig. 1) on the day of admission confirmed the presence of a six-penny nail in the trachea, its point entering the right main bronchus; the right lower lobe was consolidated. That afternoon a bronchoscopy was done and a large amount of purulent material was seen. Following the aspiration of the secretions the nail came into view. The removal of nail seemed to release a large amount of pent-up foul secretions. The nail was covered with rust which necessarily meant that it had been in the lung for sometime. The child's general condition was fair following bronchoscopy. However, he was immediately placed under oxygen tent.

On the day following, the child was restless and fretful. He exhibited an obstructive type of cough and was breathing rapidly. Dullness, diminished breath-sounds, and many coarse rales were present over the right lung. The left lung was resonant but also presented coarse rales. The next day he was coughing up slightly blood-tinged, thick, yellowish mucus. His condition failed to improve.

On the morning of the fourth day after admission, respiration became more difficult and at 7:55 he ceased to breathe. Ar-

\*Reported at a meeting of the Houston County Medical Society, Dothan, January 8, 1932, with motion pictures of this, and other bronchoscopic operations.



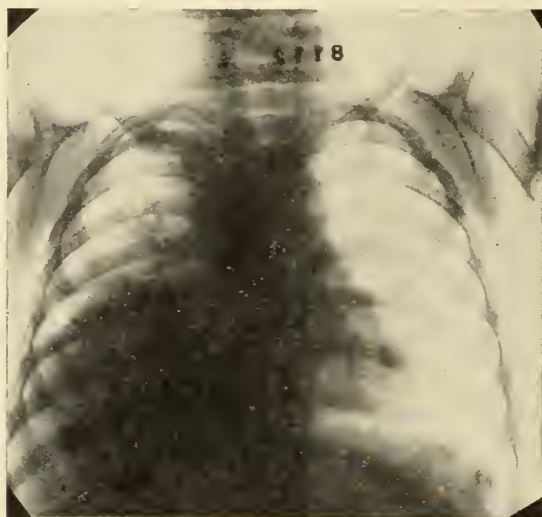


Fig. 1. Roentgenogram taken on the day of admission, showing the nail in the trachea, with its head in the right lower bronchus. Atelectasis of the right lower lobe and pneumonic reaction.

tificial respiration was resorted to, mucopurulent fluid being expelled from the nose and mouth. A minute later he began to breathe again. The child's condition was critical; he was apparently drowning in his own secretion. At 8:15 he was taken to the operating room, where I performed tracheotomy, inserting a No. 2 metallic tube. Through this a small catheter was inserted and suction instituted. Thick mucus with yellow pus was evacuated. The following day the child was breathing more easily and was clinically better. The physical signs in the chest also showed improvement. Roentgen examination (Fig.

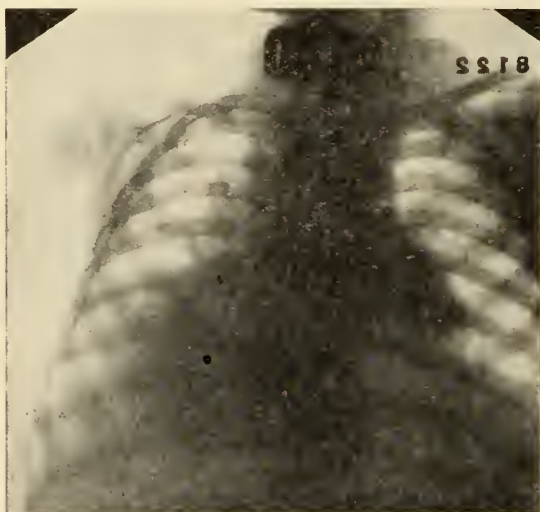


Fig. 2. Roentgenogram taken five days after the bronchoscopic removal of the nail; considerable resolution has taken place.

2) confirmed this; irregular, spotty consolidation, giving the appearance of resolving pneumonia. The temperature, however, went up to 102 degrees, with pulse of 160. The tracheotomy was left open, and aspiration employed at frequent intervals. On March 30, a pure staphylococcus culture was obtained from the throat.

During the second week in the hospital the temperature was usually below 100, and the pulse not over 130. In the third week the clinical signs indicated that the child was beginning to go downhill again. On the 11th, a third roentgenogram (Fig. 3) was taken. In this there was a shadow extending from the right hilus upward and laterally, obscuring about two-thirds of the upper lobe. The lower right lobe

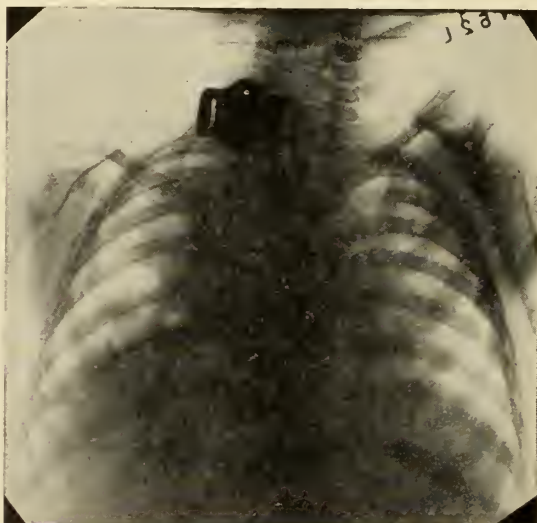


Fig. 3. Roentgenogram taken seventeen days after the removal of the nail. The abscess of the right upper lobe may be seen.

and the left lung were clear. A diagnosis of central lung abscess was made, and drainage instituted more frequently. Pus was aspirated in large amounts at frequent intervals. During the fourth week the temperature did not exceed 99. In the fifth week, there was marked improvement. By the middle of May, to our great relief, the temperature was frequently below normal. After this, the improvement in color, strength and general well-being was rapid. On May 16, the tracheotomy tube was removed and the wound allowed to heal. On the 23rd, sixty days after admission to the hospital, there had been no cough, no fever, nor other evidence of disease for more than two weeks, there were no abnormal

signs in the chest, and the tracheotomy wound had closed. That day the child was dismissed from the hospital well.

#### COMMENT

Dr. Bruce is to be congratulated upon discovering the presence of this nail. It is hard to realize that an object as large as a six-penny nail could be aspirated without immediate obstructive symptoms. The propensity of small children for putting things in their mouths, however, is only too well known. A child of 3 cannot give a good history, and if he does state a startling fact, it is apt to be disregarded. Unconscious aspiration or swallowing of objects may also occur in older persons who have artificial teeth. Of course one cannot be expected to get a roentgenogram in every case of pneumonia. It is rarely necessary for the diagnosis, and rapid recovery or death is to be expected. Moreover moving the patient to the hospital, or even to the x-ray laboratory, would turn the tide against him, and expense must frequently be considered too. However, when the illness does not run out its expected course, there is no better way to begin the more intensive study of the case than to get a roentgenogram. Granting that the most usual explanation of the continued fever will prove to be empyema, still occasionally the explanation will be the presence of a foreign body. When a foreign body is found, its removal is a matter of life and death.

In this case evidently the ciliated epithelium had become edematous, and cough, "the watch-dog of the lung"—as Dr. Jackson calls it, was abolished by the patient's weakened condition. Therefore artificial aspiration was necessary. Fortunately in the large majority of cases where there has not been a long sojourn of the foreign body in the lung, the patient is able to leave the hospital on the third or fourth day after removal. When the object has been present for some weeks, long enough to cause suppuration, the prognosis is far more serious. In some such cases, recovery is often fairly uneventful, though prolonged, but if definite abscess formation has occurred, it is usually necessary to institute intratracheal drainage to save the patient's life.

Medical Arts Bldg.

## ROCKY MOUNTAIN SPOTTED FEVER

### REPORT OF CASE\*

HUGH BOYD, M. D.

Scottsboro

Rocky Mountain spotted fever was reported in 1930 and 1931 from the rural sections of Delaware, Pennsylvania, Maryland, District of Columbia, Virginia, and North and South Carolina.

### REPORT OF CASE

My patient is sixty-two years old, the mother of several healthy children. Her past history was negative and her home life above question. On October 28 she felt quite bad, ached and pained, and was about the bed for three days. On November 1 she felt some better but on the afternoon of the 2nd was worse. Her temperature was elevated, and there were severe pains in her knees, ankles, neck and head. On November 3 she was considerably worse and in the afternoon her temperature rose to 102.

I saw her at 10:00 A. M. on November 4. The pains in her limbs, especially the lower, were severe. She was sore to the touch almost everywhere but more so in the region of the ankles and knees. There was no redness, heat or swelling of the joints. Headache was constant and her neck very sore on motion.

On physical examination the head was negative as was the throat. The tongue was coated and red at the tip and on the edges. The mouth was quite dry. Chest and abdomen were negative. She was nauseated and had been for several days. She was constipated and had taken senna leaves several days before. The gallbladder and appendix were negative. She had not had uterine, ovarian, or tubal trouble nor had there even been symptoms attributable to the genito-urinary tract. A specimen of urine procured at this time was negative except for a few pus cells.

Her vessels were those of a normal, well preserved old lady of 62. Her teeth had been removed several years ago. Her pulse was unusually fast, 110; her temperature 99 4/5. The pulse was suggestive of some cardiac lesion (probably acute) but one was not present.

\*Reported at a recent meeting of the Jackson County Medical Society, Scottsboro.



Discussion: Apparently she had some acute infectious disease, the nature of which I could not determine. She had been given triple typhoid vaccine in the summer of 1931. She was given sodium salicylate, gr. 12, every 4 hours; urotropin, gr. 5, 4 times a day; and codeine sulphate,  $\frac{1}{2}$  gr., as needed for pain.

In the afternoon (November 4) her temperature was  $103 \frac{2}{5}$  and on the two succeeding afternoons 103. The morning temperature on the 5th and 6th was 101.

On November 6 her nausea was improved as were the pains and soreness. The urine was negative. On the afternoon of this day she began to "break out"—the eruption appearing on her arms, chest and upper back. Her temperature continued about the same—A. M. 101 and P. M. 102 to  $102 \frac{4}{5}$ ; her pulse ranged from 104 to 118.

On November 10 at 10 A. M. I saw her again. Her temperature was  $101 \frac{1}{5}$ ; her pulse 104. Soreness and pains were less severe; there was no nausea or vomiting. The tongue though clean was still quite red, smooth and dry. She had complained of a dry mouth all the time. The tongue looked like a scarlet fever tongue without the raised papillae. The eruption was rather thick over the upper chest, upper back, on the arms and forearms, and in the palms of the hands. There were a few lesions on the legs and feet, a few on the abdomen, none on the bottom of the feet or in the hair.

It was maculo-papular in type, ranging in size from that of a small pea to a bean, did not disappear on pressure and was distinctly purpuric. Later some of them around the wrists and hands looked like broken blood vessels. This was the 4th day of the eruption and the 10th from the definite beginning of the disease.

On November 7 she complained of her eyes being sore and on the 10th she had a definite conjunctivitis. On November 11, Dr. Hugh Awtrey, Health Officer of Marshall County, the place of residence of the patient, and Dr. M. H. Lynch, Health Officer of Jackson County, very kindly saw her with me. Specimens of blood were taken and sent to Montgomery and Washington. Montgomery reported positive for undulant fever 1:80; Washington positive for typhoid 1:80. We expected a slight

positive to typhoid because of the recent inoculation.

November 11 at 10:00 A. M. her temperature was  $101 \frac{1}{5}$  and her pulse 104; in the afternoon her temperature was  $102 \frac{4}{5}$ . The fever continued at 101 during the morning and 102 to  $102 \frac{4}{5}$  in the afternoon until midnight November 15 when her temperature became normal followed by profuse sweating. On November 16 and 17 her temperature rose again to become normal at midnight on the 17th. Again sweating was profuse. On November 18 the morning temperature was  $100 \frac{1}{2}$ . At this time slight enlargement of the spleen was detected. The conjunctivitis was improving and the eruption fading.

I saw her last at 2 P. M. on November 23. Her temperature was 100, her pulse 90. The conjunctivitis had practically disappeared. The eruption looked like good-sized purple spots. She was indeed "spotted" on the arms, chest and back. I presume that is the source of the name "spotted fever". At this visit her tongue was clean but still very red and somewhat dry. Specimens of blood were taken again and submitted to Decatur, Montgomery, and Washington. They were reported negative. She continued to have a slight elevation of temperature—100—for a week or longer and her recovery was slow. Even now she is not entirely well.

Comments: This patient had an acute eruptive fever, either typhus or Rocky Mountain spotted. Typhus does not have a remission in onset. Those who have seen Rocky Mountain spotted fever report that frequently there is a slight remission of a day or so in the onset. This case had such a remission. The pulse in typhus is usually slow in proportion to the temperature, while in Rocky Mountain spotted fever it is considerably faster and sometimes out of proportion. In this case it was both fast and out of proportion. The fever in typhus rarely lasts over 15 days. In this case it lasted continuously 15 days and then for a week longer, with an afternoon elevation for still another week.

The eruption in typhus very rarely occurs on the face or the palms, the lesions are poorly defined and will fade on pressure. Those who know spotted fever tell us that the rash usually occurs first around the wrists and ankles and then becomes

generalized. The palms and soles are frequently involved, the face occasionally and the scalp rarely. Further, the eruption is definitely petechial and purpuric and persists for weeks or, after fading, there are evidences of it. The eruption in this case was mostly on the upper chest, upper back, arms, forearms, hands and palms. There were a few lesions on the face, body and lower limbs and none in the hair. It was definitely purpuric and persisted.

Rigidity of the neck is very rare in typhus but occurs in 20 per cent of cases of spotted fever. This patient complained so much of her neck that she asked me several times if there was any evidence of trouble in her spine.

There is no reason to suspect that she had come in contact with infected fleas or lice, while her habit of being in the garden, orchard and meadow a great deal is very suggestive of contact with an infected dog tick. Therefore, while the laboratory tests were negative, I am quite positive that this patient had Rocky Mountain spotted fever (eastern type).

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## THE DIAGNOSIS OF UPPER ABDOMINAL CONDITIONS\*

A. C. JACKSON, M. D.  
Jasper

In dealing with problems of medicine and surgery, no circumstance is as likely to put one on the highway to success as a carefully made diagnosis. Except in rare instances, I have but little faith in clinical tests for making diagnoses and feel that exploratory operations should be done only when surgery is definitely indicated. Further, I have but slight regard for any man's ability who depends on machines instead of his God-given senses to work out problems in diagnosis. The sense of touch, sight, etc., should be developed and educated to the highest degree and become the first thought in diagnosis with the machines used merely as an adjunct. A careful history is of the utmost importance, not alone from the number of facts elicited but in the confidence inspired in the patient which in turn opens the avenue of approach for the examination. All of you

well remember the terms inspection, palpation, percussion, auscultation, etc., as the fundamentals in the game of diagnosis; when making a physical examination if you will always go through these procedures with intelligence there will be less chance of error in diagnosis. In examinations of the abdomen no procedure lends more light than careful palpation with educated finger tips.

Consideration of the upper abdomen leads us to think of diseases and injuries of the liver and biliary system, stomach and duodenum, pancreas, and the spleen. Atrophic cirrhosis of the liver occurs most often in alcoholics and syphilitics and is often without symptoms until late in the disease when we may find nausea and vomiting, irregular bowels and ascites. Hypertrophic cirrhosis occurs in young males with no alcoholic history and the absence of all known etiologic factors is a remarkable feature. The course is usually chronic with acute flare-ups attended by fever and jaundice. There is bile in the urine and pain over the liver.

Solitary abscess of the liver occurs in tropical and subtropical climates and commonly follows amebic dysentery. It occurs in the right lobe of the liver which is enlarged and usually causes bulging over the right side of the upper abdomen and lower chest. In addition to enlargement of the liver upward and to the right there is pain, fever, dry skin and a septic condition. At the outset the fever is high with chills, followed by a chronic septic course. The most common complications are rupture into the peritoneum or through the diaphragm into the lung. We will mention in passing pyemic abscess of the liver which occurs in septic conditions and is invariably fatal; also extrahepatic abscess which occurs between the liver and the diaphragm following general peritonitis.

In gallbladder disease there is usually a history of indigestion with a sense of fullness in the upper abdomen and many cases give a past history of typhoid fever. It occurs most often in women from 30 to 45 years of age and of the obese type. However, I have drained the gallbladder in one five-year-old boy and found gallstones in several cases under 25 years of age. Cholecystitis manifests itself by a severe paroxysmal pain in the right side of the upper

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\*Read at a meeting of the Northwestern Division of the Association, Tuscaloosa, January 21, 1932.



abdomen, which may be transmitted to the right shoulder, by nausea, vomiting, rise of pulse and temperature, prostration, distension of the abdomen, rigidity, and general tenderness, later becoming localized. The gallbladder may become so enlarged that it may be felt and the condition may result in empyema of the organ and demand drainage.

Gallstones may be single or multiple, large or small, smooth or rough, and in many cases present no symptoms referable to the gallbladder. The early symptoms are a sense of fullness, weight, and oppression in the epigastrium with slight nausea and chilliness after eating. Should a stone become engaged in the cystic or common duct the pain is abrupt in onset, is agonizing, and extends all over the right side of the upper abdomen and to the shoulder. There is vomiting, profuse sweating, rapid pulse, rigors and rapid rise in temperature; the patient writhes in agony. There is rigidity and tenderness on pressure and if the condition is not relieved there will be pus formation and empyema.

Carcinoma of the gallbladder is recognized as a hard oblong tumor extending toward the umbilicus which is firm and hard. There is usually jaundice with sometimes fever and sweats, and the pain is constant with paroxysmal attacks.

Of the stomach diseases gastritis manifests itself by slight indigestion, discomfort, headache, depression, nausea, eructations, and vomiting which usually gives relief.

Peptic ulcer of the stomach and duodenum is one of the most common diseases of the upper abdomen and will not be considered separately. It is marked by chronicity and periodicity. Most cases have dyspepsia of varying degrees; many times it is severe. Pain is the most constant symptom and is provoked by ingestion of food, the site being in the epigastrium and radiating to the back. The so-called "hunger pain", which is relieved by taking some food, may be present. Nausea and vomiting is a fairly constant symptom. Tenderness on pressure is usually present and the gastric contents show increased acids. Loss of weight is due to the prolonged dyspepsia.

When perforation of a peptic ulcer occurs there is a sudden acute, agonizing pain

in the upper abdomen which usually causes collapse of the patient. The pain is rarely ever relieved by morphine and the patient begs not to be disturbed. There is an anxious expression, pale cold skin, normal or subnormal temperature, but the pulse is usually slow and of good volume. The abdomen has board-like rigidity and general tenderness on pressure, more marked in the upper right quadrant.

The great handicap in carcinoma of the stomach is that there are practically no symptoms until the disease is far advanced. Loss of desire for food is the most constant early sign. Some of the later signs are pain, vomiting, and hemorrhage. Persistent gastric symptoms in any individual over forty years of age require that malignant disease be excluded. If repeated studies of gastric contents show low acids or absence of acids, and x-ray shows interference with the peristaltic waves, an exploratory operation should be done.

Acute pancreatitis is sudden and dramatic in onset with acute epigastric pain, a condition of shock with persistent vomiting and constipation. There is fullness and tenderness in the upper abdomen with increasing distension. The tenderness is more marked over the pancreas and a tumor mass may be felt.

Carcinoma of the pancreas manifests itself by paroxysmal epigastric pain, intense and permanent jaundice, with dilatation of the gallbladder, rapid emaciation, and the presence of a tumor in the epigastrium.

The spleen may have cysts, gummas, or be tuberculous. The greatly enlarged spleen is usually associated with blood diseases as splenomyelogenous leukemia, splenic anemia, and the chronic fevers such as typhoid and malaria.

Injuries to the organs of the upper abdomen may be gunshot or stab wounds, and rupture from violent blows over the abdominal wall. In studying gunshot wounds it is well to know the range of the missile by comparing the wound of entrance and the wound of exit or the location of the bullet in the tissues by x-ray and in this way calculate what organs may have been injured by it. A careful examination as to the amount of shock, character, volume, and rapidity of the pulse, evidence of early peritonitis from rigidity of the muscles, is indispensable. In case of violent blows

over the abdomen, such as a mule kick, it is very difficult at times to determine whether or not there has been a rupture of a viscus. One must know the type of injury, the character, and onset of the pain, and study the patient's condition from the standpoint of rigidity of the abdominal muscles, shock, and rapidity and volume of the pulse in order to arrive at a definite conclusion. If, after a careful analysis of such case is made, there remains any doubt, an exploratory operation should be done. While doing an exploratory operation it is always well to remember that there may be a rupture of the stomach into the lesser peritoneal cavity or a rupture of the duodenum into the retroperitoneal space.

A final word: Since most of these conditions are surgical, and many times emergency, let me urge that we not lose too much valuable time in trying to make an absolutely correct scientific diagnosis at the hazard of the patient. I would also like to strongly condemn the use of morphine before a decision is made. Quoting Da Costa: "The exact diagnosis is always difficult and in many cases is impossible. What a surgeon must try to determine, and what he usually can determine, is whether he is dealing with a trivial and temporary derangement for the relief of which an operation is entirely unnecessary, or whether he is confronted by a grave calamity which imperatively demands immediate surgical aid."

## USE OF ATROPINE IN EYE CONDITIONS\*

B. FRANK JACKSON, M. D.  
Montgomery

This is a broad subject when considered in detail, but as a whole may be summed up in rather concrete form. It appeals both to those engaged in medicine and surgery, for upon its uses depends the outcome of many conditions first seen by these practitioners. As you know, atropine is our oldest known and most frequently employed mydriatic and constitutes the so-called "sheet anchor" of our armamentarium in ophthalmologic practice.

Among the eye conditions in which it is used, we might make these arbitrary classifications, viz.:

1. Corneal conditions;
2. Intra-ocular conditions;
3. Refraction and general intra-ocular examinations.

Corneal conditions may be further subdivided into diseases and traumatic. Among the diseases may be mentioned ulcers, keratitis and trachoma.

### CORNEAL CONDITIONS

*Ulcers* are the direct result of infection or infections of the outer layers of the cornea (and may or may not be preceded by trauma), as in measles, scarlet fever, diphtheria, pneumonia, and gonorrheal infection. They appear as small opaque spots varying in size, shape, depth and location, are usually painful and give rise to intense photophobia, lachrymation, and even mucopurulent discharge. When such symptoms or signs develop in the eye or eyes of a patient ill with such diseases as above named, atropine in a solution of one per cent, or ointment of the same strength, should at once be employed, along with other remedies and measures of generally accepted treatment. The eyes should be bandaged to immobilize and to reduce rubbing, to prevent blinking, as well as to relieve pain and photophobia, except in purulent conditions where drainage is better facilitated by leaving the eyes open. Maceration of the cornea from retained pus discharge is almost certain to result in corneal ulceration, hence the importance of flushing the conjunctival sacs thoroughly several times daily before instilling atropine and other curative medicaments.

Traumatic lesions of the cornea always require atropine, if the injury is of much consequence, and its early use often obviates serious complications in these cases. Bandaging the injured eye is also advisable.

*Keratitis* is characterized by an opaque spot or spots in the cornea, accompanied by pain, lachrymation and photophobia. The early use of atropine helps to alleviate all these symptoms and prevent other serious complications affecting the iris and deeper structures. Bandaging the eyes after instilling atropine is also of advantage in most of these conditions.

*Trachoma* often causes severe corneal irritation or even ulceration with development of capillary blood vessels in the nor-

\*Read at a meeting of the Barbour County Medical Society, Clayton, January 12, 1932.



mally non-vascular cornea, resulting in what is called "pannus". This may result in serious scar formation and visual defects, even to the point of blindness, unless checked in its earlier stages. Atropine is a valuable adjunct in its treatment, serving to relieve ciliary congestion, photophobia, and promotes restoration of the corneal lesions.

#### INTRA-OCULAR CONDITIONS

Among the most common is iritis, in its many varied forms, which requires atropine to prevent adhesions to the anterior capsule of the crystalline lens by pulling the pupil open and thus getting its margins away from the central portions of the lens capsule; and to allay ciliary congestion with its attendant pain and overactivity, thus affording rest and recuperation. Iritis is one of the most common complications in general syphilitic infection, also from focal infections of teeth, tonsils, sinuses, etc. The pupil has a tendency to contract in contra-distinction to glaucoma which soon dilates it and in which atropine is destructive to the vision in the affected eye, and may even precipitate an attack in an otherwise unaffected eye. Hence, the importance of distinguishing between glaucoma and other intra-ocular conditions.

Other common conditions requiring atropine are retinitis, choroiditis and various forms and combinations of the two. Also, intra-ocular hemorrhages, foreign bodies (as steel, bird-shot, etc.), the latter usually resulting in loss of vision and even enucleation.

#### REFRACTION AND GENERAL INTRA-OCULAR EXAMINATIONS

Some form of atropine, usually homatropine, is most commonly employed as a mydriatic in refractions in younger people, which paralyzes the muscles of accommodation, dilates the pupil and enables the examiner to ascertain the total error by retinoscopy. Of course, a post-cycloplegic examination may be necessary to determine how much of the total correction will be accepted with comfort by the patient. Young subjects have a large amount of accommodation in far-sight and unless there is a tendency to crossing of one, or both eyes, it is usually better not to give them full correcting lenses, but allow their ac-

commodation to take care of one or more diopters of far-sight, else they have blurry glasses on this account.

General intra-ocular examinations require mydriatics in order to give free access to all parts of the fundus with the ophthalmoscope, and some form of atropine is usually employed.

Dilatation of the pupil or pupils may already exist as an objective symptom in the existing condition and no mydriatic will then be needed, as in certain stages of glaucoma, optic atrophy, some forms of meningitis and intra-cranial lesions which paralyze the motor oculi nerve branches to the iris muscle.

In conclusion we might sum up the use of atropine in eye conditions by saying, as some of the old savants said with regard to potassium iodide in syphilis, "when in doubt use atropine." In so doing, much suffering will be alleviated and useful vision preserved.

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#### TUBERCULOSIS WITH SPECIAL REFERENCE TO INCIDENCE IN CHILDREN AND MODES OF INFECTION\*

E. R. EMENS, M. D.  
Decatur

Definition: Tuberculosis is an infectious disease caused by *B. tuberculosis* (Koch). It may involve any organ and almost any structure of the body. No age is exempt from the disease. Thought at one time to be rare in children it has been found by study and observation to increase with age—from 1.5 per cent in the first year to 38 per cent in the 14th year in a series of 1,125 cases worked out by Veeder and Johnson of St. Louis. At this point I think it is well to distinguish between tuberculous infection and tuberculous disease. Infection means that the bacillus has gained entrance into the body. "Tuberculous disease is the change occurring in body tissue incidental to the growth and development of tubercle bacilli in such tissue."

Predisposing Causes: The fact that as age increases the incidence of tuberculous infection is greater would tend to show that as the child has more chances to become infected these exposures increase the

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\*Read at a recent meeting of the Morgan County Medical Society, Decatur.

number of cases. The fact that nearly every adult reacts to tuberculosis indicates very clearly that there is no real immunity or resistance to infection by the tubercle bacillus. Given the opportunity, infection occurs.

The time that infection occurs, although largely accidental, is a matter of great importance. The younger the child, the less likely is the infection to become localized. It is followed by a rapid spreading tuberculosis in the majority of cases under one year of age. As age advances, localization is more likely, except in very young children it is improbable that tuberculous infection immediately antedates tuberculous disease. It is far more common for a considerable time to elapse, months or even years, before improper living or an infectious disease breaks down resistance to such an extent that tuberculous disease occurs.

In speaking of predisposing causes, it should be borne in mind that these more properly refer to the dissemination of the process from a quiescent focus rather than to primary infection. These predisposing causes include all conditions which bring about diminished resistance—unhygienic environment, infectious disease, etc.

**Modes of Infection:** Intra-uterine infection although rare may be mentioned as a possibility. In these cases autopsy examinations (macroscopic and microscopic) have shown the mother to have advanced tuberculosis at the time of parturition. The mucous lining of the uterus contained nodules as did the placenta and umbilical cord. It is possible then that a child may acquire a generalized infection through the blood stream. Direct inoculation seems to be the most common mode of infection. This of course is due to direct contact with individuals who are openly tuberculous. There are cases on record of infection due to mouth-to-mouth aspiration. There are many other modes as, for example, sleeping quarters, kissing, toys, dishes, food supplies, etc. In this connection we should think of both the human and the bovine type, although at this time I shall deal with the human only.

**Paths of Infection:** The tubercle bacillus may gain entrance into the body through the respiratory tract, alimentary tract and the skin. The latter, due to its

rarity, need only be mentioned. In infancy and early childhood the infection enters the body more frequently through the respiratory tract. This fact is well verified by clinical symptoms as well as pathologic findings. When infection occurs through this path it is usually of the human type.

Infection through the alimentary tract may be due either to human or bovine origin. When infection occurs through this channel the tonsils or the intestines show the primary lesion as a rule. It is said that the tubercle bacillus can penetrate the intestinal wall without leaving a sign of its passage but, as a rule, nodules are present; positive proof of the infection and ultimately the disease. It is hardly necessary for me to say that bacilli can pass through an already inflamed mucous membrane easier than through one with normal resistance. In either event, however, we find infected lymph glands in the region of the involved area.

As stated above, the tonsils are often primarily involved. From this point, infection may spread to surrounding tissues and ultimately to the lungs by way of the lymphatics or direct contact of mucous membrane.

The question which arises in every case of tuberculosis is how and when the patient developed the disease, and what factors finally precipitated the disease or caused the dissemination of a local process.

**Discussion:** The object of this paper is to emphasize the importance of a complete examination of every undernourished infant and young child. It is my opinion that more children will show a positive tuberculin reaction now than formerly. In considering the foregoing statements it is well to think of the site of predilection as revealed by the following tabulation compiled from a series of 255 cases which came to autopsy:

Lungs .....	of 235 cases.....	92.1%
Pleura .....	of 93 cases.....	36.5%
Bronchial Lymph Nodes.....	of 208 cases.....	81.5%
Brain .....	of 85 cases.....	33.3%
Liver .....	of 178 cases.....	69.8%
Kidney .....	of 88 cases.....	30.6%
Intestines .....	of 110 cases.....	43.1%
Mesenteric Lymph Nodes.....	of 118 cases.....	46.2%
Peritoneum .....	of 22 cases.....	8.6%

**Conclusion:** In presenting this paper my sole desire is to impress the importance



of early recognition of the disease and of being on guard in any obscure or obstinate case which does not respond to treatment.

## DENTISTRY IN RELATION TO OBSTETRICS\*

R. C. YOUNG, D. D. S.  
Anniston

The dominating spirit of present-day medicine in all its branches is the splendid one of prophylaxis; no one interested in the welfare of humanity can question the wisdom of such spirit. In the whole dominion of preventive medicine perhaps there is no one thing of greater importance than the welfare of the prospective mother and her child; viewed from all points,—economic, sociologic or scientific—if the unborn child is to survive and be an asset to the nation, the pregnant patient must be brought to the highest possible degree of health. This being true, dentistry, as a branch of the wide field of medicine, must do her part.

Lawrence M. Randall, M. D., of Rochester, Minnesota, says: "It is our routine in the Mayo Clinic to refer all patients seen in early pregnancy to the dentist for thorough examination of the teeth and mouth, including roentgen ray examination".

Further, Joseph N. Nathanson, M. D., New York, Woman's Hospital, says: "Bumpers and Meisser as well as other investigators have shown the close association that exists between teeth and pericarpial infection and infection of the urinary tract in the human". Since, therefore, an abundance of clinical and experimental evidence has been adduced to show that renal infection, particularly pyelitis and pyelonephritis, is in a large number of cases primarily hematogenous in origin, the importance of eradicating pericarpial tooth infections in the pregnant patient is at once manifest. Similarly, Talbot has shown a definite relationship between oral focal infection and placental infarctions, with early abortion in many cases. La Vake also believes that dental infections are possible contributing causes in the production of pre-eclamptic toxemia and even eclampsia.

While one must admit that he is unwilling to ascribe every abnormal deviation in pregnant females to infective teeth, nevertheless, the evidence at hand is sufficiently overwhelming to condemn them as potential sources of danger.

Pierrepont's treatise in the *Lancet* (June 1927) on the influence of maternal oral sepsis on the fetus and marasmic children sets forth conclusions based on his observations of nine years of marasmic children and their mothers; and upon those children who, even though breast fed, still suffered from vomiting and diarrhea. In connection with these cases careful examination was made of the mother's mouth. The clinical evidence strongly points to the septic condition of the mother's mouth as having a very marked effect upon the fetus and the postnatal condition of the child. In the following report nothing of a pathologic nature was found in the mother other than in the mouth:

1st: The toxins from maternal oral sepsis have a very strong influence in a number of cases upon the vitality of the rapid growing fetus, so that the child is handicapped from before birth with a low vitality and therefore the marasmic condition is antenatal in its inception.

2nd: Prematurity of birth and miscarriages, when no other cause can be discovered, is brought about by the toxic state of the mother induced by the septic condition of infective teeth.

3rd: The diminution of the quality or alteration of the mother's milk, where no other cause can be ascertained, is due to the selective affinity of certain toxins for certain cells of the mammae. The toxins, and in some cases the micro-organisms themselves, are found in the milk.

Many other authorities could be cited as, for example, Williams and DeLee, Hirsch, the German obstetrician; and Studeford, Chief Obstetrician of Sloane Maternity Hospital. The last named, as a routine, insists that all patients have their dental defects and oral infection removed, regardless of the period of pregnancy. He finds he has less post-puerperal toxins, infections and irritations. The findings of Pierrepont regarding the effect of dental sepsis upon nursing are borne out by the observation of Waller in England and of Hams, in co-

\*Read at a meeting of the Northeastern Division of the Association, Sylacauga, January 19, 1932.

operation with the Detroit Board of Health.

Considerable confusion exists regarding extraction of teeth during pregnancy. In early pregnancy indications for this operation are the same as if pregnancy did not exist. At any time such procedure, if undertaken with careful co-operation of physician and dentist, is perfectly safe (Randall of Mayo Clinic).

Disturbances in the mouth during pregnancy, long noticed by many observers, may be neuralgia, gingivo-stomatitis, progressive caries, new growths and hyperactivity of the salivary glands. A most annoying neuralgia sometimes arising is traceable to no particular tooth and disappears immediately after birth of the child.

Proliferative gingivitis is frequently found in the early stages of pregnancy. It starts as a simple inflammation of the gums about the necks of the teeth. In the progressive stage the gums are swollen and very tender, bleeding at the slightest touch. Proliferation is sometimes so great that the teeth seem to disappear under the gums. If the hyperplastic gum is lifted from the teeth the crown will seem bathed in pus. Lack of oral hygiene is a predisposing cause. Brophy states that it is not an uncommon error to operate upon such an hypertrophy, mistaking it for a neoplastic condition. Treatment consists of thorough cleaning and scraping of the teeth, polishing all rough places, instruction in the use of the tooth brush and using an astringent wash. In short remove all possible irritation to the gums. Nathanson of the obstetric division, Woman's Hospital, New York, says that most of the true tumors seen in the mouth of the pregnant woman are of the epulis type. These tumors are usually small, covered with mucosa, and tending to ulceration. An epulis may be highly vascular and pedunculated, and situated upon either jaw between the incisors. Though sarcomatous in nature, metastasis does not occur. It might be well to bear in mind that proliferative gingivitis has a marked tendency to improve under proper treatment and after delivery tends to subside. The epulis does not; following delivery it should be removed. Pregnancy takes high toll of teeth. The old adage, for every child a tooth, more correctly would be for every child several teeth.

Preventive medicine and dentistry must take action to protect both patient and her expected child. A high calcium balance must be maintained.

Hyperacidity of the secretions and frequent vomiting keep the teeth bathed in an acid saliva. Why this acid condition should prevail I cannot explain except on a basis of unbalanced metabolism. The acidity often causes great discomfort to the patient, excoriating the mucosa of the mouth, tongue and throat. Much relief can be given by the liberal use of milk of magnesia as a mouth wash and gargle. If magnesia is not convenient, lime water will prove satisfactory.

In a recent paper, Dr. Larson of the University of Minnesota, associated toxemias of pregnancy with disturbances of the calcium metabolism. This investigator states that during the period of gestation the growing fetus may withdraw as much as 100 grams of calcium from the mother. Unless this is replaced, serious results are inevitable. A marked decrease in the supply of calcium leads to increased permeability of the liver cells by producing a relative increase of sodium and potassium in the blood stream. This unbalanced calcium-sodium-potassium state may lead to an increase in the permeability of the cells to such a degree that glycogen can no longer be retained. Thus, once the liver cells have become depleted of their glycogen stores, they release certain toxic proteins which would under normal conditions never reach the circulation.

Larson therefore believes that these toxic liver proteins are the causative factors in the production of the toxemia of pregnancy. If these are due to an imbalance of the mineral content of the liver cells, with resultant increased permeability to such an extent as to cause a pouring out of their toxic proteins, then it is logical to assume that some therapeutic endeavor should be instituted to overcome this condition. Hence, the administration of calcium lactate or calcium carbonate or the use of parathyroid extract may be indicated in some cases, for, as Larson points out, not only must the intake of ingested calcium be considered, but its proper metabolism is also of extreme importance.

Preventive medicine must take account of the patient's diet and nutritional bal-

(Continued on page 413)



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April 1932

## THE MOBILE MEETING

When the Association treks southward for its Sixty-fifth Consecutive Annual Session, April 19-22, it will find the city of azaleas and japonicas happy to receive, after an absence of three years, a cross section of one of the State's most important groups—its medical men. Those privileged to enjoy in past years the hospitality of the Mobile County Medical Society and the historic city are restive for the hour to come when they may lay aside exacting professional duties and repair again to haunts made immortal in medical annals by Josiah C. Nott, Jerome Cochran, William H. Anderson, Geo. A. Ketchum, and William Henry Sanders.

"Among earthly blessings", said one of these, "what one compares with the consciousness of being surrounded by true and genuine friends—friends who can be implicitly relied upon in the severest trials that come? What social surroundings so well calculated to inspire and seal such friendship as to 'touch elbows' at frequent intervals with colleagues fighting the same battles with yourself, and led on by the same hopes that through the efforts of a

harmonious and enthusiastic profession science will yet redeem man from many of the penalties of 'that primal sin that brought death into the world and all our woe?'"

Such a privilege, the Mobile meeting will afford. Time there will be for touching elbows, but more—the scientific program will be equally as refreshing. An Alabama boy will return to deliver the Jerome Cochran Lecture. The President-elect of the American Medical Association will be in attendance to address the Public Meeting. On Thursday afternoon the Association will resolve itself into sections—the fields of obstetrics and gynecology, internal medicine, radiology, surgery, orthopedics, pediatrics, dermatology, proctology, urology, and eye, ear, nose and throat bringing to the meeting men outstanding in their respective branches.

The general practitioner, too, will find much in the program to interest him. The Acute Abdomen, The Treatment of Tuberculosis, Acute Intestinal Obstruction, Obstetric Narcosis, Breast Feeding, Hay-Fever and Asthma, Brill's Disease—these and other subjects will be presented in the general session.

Entertainments for relaxation have not been omitted. Who does not recall with peculiar pleasure past rides on the bay! Wednesday afternoon has been set apart for another of these enjoyable occasions, when etiology, diagnosis and treatment will be forced from the picture by rapidly changing scenery, a dish of oysters on the half shell, or a prosperity sandwich.

Thursday afternoon's section meetings will find culmination in a motorcade to one of the South's distinctive show places, the Bellingrath azalea garden on the river. There amid winding pathways yarns may be spun until lengthening shadows call from refreshment to labor again in the picturesque Battle House.

The call has been sounded. Let nothing deter you from availing yourself of all the opportunities the 1932 session affords. When the four days have been concluded there will yet be time to pick up the string where you dropped it and go on with renewed vigor, and with memories of the Mobile meeting to act as your inspiration.

## PROGRAM

### SIXTY-FIFTH CONSECUTIVE ANNUAL SESSION, MEDICAL ASSOCIATION OF THE STATE OF ALABAMA, MOBILE, APRIL 19-22, 1932

Headquarters and All Meetings at  
The Battle House

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The Mobile County Medical Society

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L. W. Hollis ..... E. W. Cawthon

C. A. Mohr

## PROGRAM

First Day, Tuesday, April 19

##### Morning Session

1. Call to order at 10 A. M. by the President—  
*Toulmin Gaines, Mobile.*

2. Invocation—  
*Rev. Warren DuBosc, D. D., Mobile.*

3. Address of Welcome—  
*J. H. Dodson, President, Mobile County Medical Society.*

4. Message of the President—  
*Toulmin Gaines, Mobile.*

5. Report of the Senior Vice-President—  
*G. F. Littlepage, Sheffield.*

6. Report of the Vice-President, Southwestern Division—

*K. A. Mayer, Lower Peach Tree.*

7. Report of the Vice-President, Northeastern Division—

*W. M. Salter, Anniston.*

8. Report of the Vice-President, Southeastern Division—

*G. W. Williamson, Hartford.*

9. Report of the Secretary—  
*Douglas L. Cannon, Montgomery.*

10. Report of the Treasurer—  
*J. U. Ray, Woodstock.*

11. Report of the Committee of Publication—  
*Fred Wilkerson, Chairman.*

12. Report of Standing Committees:

(a) Mental Hygiene—  
*W. S. Littlejohn, Chairman.*

(b) Prevention of Blindness—  
*W. G. Thigpen, Chairman.*

(c) Committee to Meet Druggists—  
*W. S. Rountree, Chairman.*

(d) Maternal Welfare—  
*J. R. Garber, Chairman.*

(e) Infant Welfare—  
*J. W. Simpson, Chairman.*

(f) Military Committee—  
*J. M. Mason, Chairman.*

(g) First Aid—  
*J. D. Heacock, Chairman.*

##### Afternoon Session

##### Tuesday

Call to Order, 2:30 P. M.

Unfinished and Miscellaneous Business

##### Scientific Papers

1. The Acute Abdomen as Encountered by the Country Doctor—

*C. P. Gay, Geneva.*

Discussion to be opened by A. S. Frasier, Dothan, and J. M. Barfield, Lineville.

2. The Increasing Mortality from Appendicitis—  
*J. Otis Lisenby, Atmore.*

Discussion: W. R. Meeker, Mobile, and J. Mac Bell, Mobile.

3. Peptic Ulcer from the General Practitioners' Standpoint—

*W. R. Carter, Repton.*

Discussion: G. C. Kilpatrick, Mobile, and G. O. Segrest, Mobile.

4. The Status of Diphtheria Immunity in a Typical Alabama County—

*O. L. Chason, Montgomery.*

5. Recent Advances in the Prophylaxis of Diphtheria—

*A. H. Graham, Opelika.*

Discussion on papers of Drs. Chason and Graham to be opened by A. M. Shelamer, Union Springs, and W. L. Orr, Ozark.



## Evening Session

## Tuesday

Call to Order, 8:00 P. M.

Unfinished and Miscellaneous Business

## Scientific Papers

1. The Clinical Aspects of Allergic Hay-Fever and Asthma—  
*G. Heustis Fonde', Mobile.*  
Discussion: Marion T. Davidson, Birmingham, and C. K. Weil, Montgomery.
2. Tuberculin Testing—  
*P. W. Auston, Montgomery.*  
Discussion: T. E. Tucker, Monroeville, and Clifford L. Lamar, Birmingham.
3. Phrenirexis in the Treatment of Tuberculosis—  
*N. R. Clarke, Mobile.*  
Discussion: Emmett Frazer, Mobile, and E. S. Sledge, Mobile.
4. Bacteriophage: Its Nature and Therapeutic Application—  
*John E. Walker, Opelika.*  
Discussion: D. H. Doherty, Selma, and Burr Ferguson, Birmingham.
5. Hernia: Report of an Anomalous Case—  
*A. C. Jackson, Jasper.*

## Second Day, Wednesday, April 20

## Morning Session

Call to Order, 9:00 A. M.

Unfinished and Miscellaneous Business

## Scientific Papers

1. A New Instrument for the Treatment of Endometrial Conditions—  
*S. D. Suggs, Montgomery.*
2. The Diagnosis and Treatment of Acute Intestinal Obstruction—  
*Alton Ochsner, New Orleans.*  
Discussion: J. M. Mason, Birmingham, and E. F. Moody, Dothan.
3. Observations in Spinal Anesthesia—  
*Jesse H. York, Atlanta.*  
Discussion: G. C. Ussery, Roanoke, and S. R. Benedict, Birmingham.
4. 11 A. M.—Jerome Cochran Lecture—  
*A. Benson Cannon, Chief of Dermatology and Syphilis, Vanderbilt Clinic, and Associate Professor of Dermatology and Syphilis, Columbia University, New York.*
5. Obstetric Narcosis—  
*Sidney Meeker, Memphis, Tennessee.*  
Discussion: C. M. Cleveland, Mobile, and C. G. Laslie, Montgomery.
6. Gynecologic Office Treatment—  
*T. B. Sellers, New Orleans.*  
Discussion: J. M. Weldon, Mobile, and Gilbert Douglas, Birmingham.
7. Aberrant Endometrium—  
*Luther L. Hill, Jr., Montgomery.*  
Discussion: M. Y. Dabney, Birmingham, and H. B. Dowling, Mobile.

## Wednesday Afternoon

A Ride on the Bay

(Oysters on the half shell, Sandwiches, and—)

## Evening Session

## Wednesday

## PUBLIC MEETING

1. The Obligations and Opportunities of Local Medical Men—  
*E. H. Cary, President-Elect, American Medical Association.*
2. Our State Association—  
*Jerre Watson, Anniston.*
3. Address: Mobile's Gifts to Medicine and Public Health—  
*J. N. Baker, State Health Officer.*

## Third Day, Thursday, April 21

## Morning Session

Call to Order, 9:00 A. M.

Unfinished and Miscellaneous Business

## Scientific Papers

1. The Newer Concept of the Etiology of Cancer—  
*Irwin P. Levi, Anniston.*  
Discussion: H. B. Wilkinson, Montgomery, and R. V. Taylor, Mobile.
2. Hyperinsulinism (Insulogenic Hypoglycemia) as One of the Causes of Epilepsy: Its Control by Diet—  
*Scale Harris, Birmingham.*  
Discussion: W. W. Harper, Selma, and J. Harold Watkins, Montgomery.
3. Allergy in Children with Particular Reference to Food Idiosyncrasies—  
*Jacques Baumhauer, Mobile.*  
Discussion: Jas. S. Jordan, Georgiana, and N. B. Cannady, Dothan.
4. The Importance of Postnatal Care—  
*K. B. Williams, Hartford.*  
Discussion: W. M. Salter, Anniston, and Robert Parker, Montgomery.

## Thursday Afternoon\*

## SECTION MEETINGS

1:00 P. M.

## Dermatology and Syphilology

1. Chairman's Address: The Relation Between the Dermatologist and The Profession at Large—  
*Andrew L. Glaze, Birmingham.*
2. Lichen Planus—  
*Frederick E. Stockton, Birmingham.*
3. The Treatment of Arsphenamine Dermatitis—Lantern Slides—  
*Martin T. Van Studdiford, New Orleans.*
4. Epithelioma of the Face—  
*Chas. O. King, Birmingham.*
5. Sporotrichosis—  
*Harry R. Cogburn, Mobile.*

## Internal Medicine

1. Pulmonary Tuberculosis and Its Therapeutic Problems—  
*L. J. Moorman, Oklahoma City.*

\*Though the Association designated Wednesday afternoon for sectional meetings, it appeared advisable to ask the Chairman of the Board of Censors to approve a change to Thursday in order that a conflict with the boat ride might be avoided.

## 2. State Control of Tuberculosis—

*Henry Boswell, Sanatorium, Miss.*

Discussion: J. N. Baker, Montgomery, and Cabot Lull, Birmingham.

## 3. Cardiac Arrhythmias—

*T. K. Lewis, Birmingham.*

Discussion: L. W. Roe, Mobile, and W. S. Hannah, Montgomery.

## 4. Nutritional Problems in Relation to Tuberculosis—

*L. W. Roe, Mobile.*

Discussion: J. S. McLester, Birmingham.

## 5. Migraine: Report of Case—

*Grady O. Segrest, Mobile.*

Discussion: J. S. Turbeville, Century, Fla., and W. R. Carter, Repton.

## Obstetrics and Gynecology

## Symposium on the Hemorrhages in Obstetrics—

## (a) Progress Toward Ideal Obstetrics—

*Percy W. Toombs, Memphis.*

## (b) Hemorrhages in Early Pregnancy—

*T. M. Boulware, Birmingham.*

## (c) Placenta Previa—

*G. G. Woodruff, Anniston.*

## (d) Uterine Relaxation—

*F. M. T. Tankersley, Montgomery.*

## (e) Bleeding Following Pregnancy—

*S. L. Ledbetter, Jr., Birmingham.*

## Ophthalmology and Otorhinolaryngology

## 1. Cataract—

*C. A. Thigpen, Montgomery.*

Discussion: J. D. Perdue, Mobile, and K. W. Constantine, Birmingham.

## 2. Glaucoma—

*Samuel Kirkpatrick, Selma.*

Discussion: J. C. O'Gwynn, Sr., Mobile, and A. E. Maumenee, Birmingham.

## 3. Electrocoagulation—

*A. B. Harris, Birmingham.*

Discussion: T. F. Wickliffe, Jasper, and T. L. Rennie, Dothan.

## 4. The Simple Mastoid Operation—

*J. A. Keyton, Dothan.*

Discussion: P. S. Mertins and Bruce Holding, Montgomery.

## 5. Motion Picture Demonstrations—

(a) Squint—(Courtesy of Dr. F. E. Burch, St. Paul, Minn.)

(b) Frontal Sinus—(Courtesy of Dr. S. R. Skillern, Philadelphia.)

## 6. Organization of the Section.

## Proctology

## 1. Organization of the Section.

## 2. Differential Diagnosis of Rectal Malignancies—Lantern Slides—

*Curtis Rosser, Professor of Proctology, Baylor Univ. College of Medicine, Dallas, Texas.*

## 3. Protozoan Infections in the South and the Importance of Their Early Recognition and Proper Treatment—

*John L. Jelks, Memphis.*

## 4. Rectal Carcinoma: Report of Unusual Case (from the surgical service of Cecil D. Gaston)—

*Martin L. Malloy, Birmingham.*

## Radiology

## 1. Structural Changes in Chronic Arthritis—

*J. C. Chapman, Birmingham.*

## 2. X-Ray Treatment of Epitheliomata—

*L. E. Sorrell, Birmingham.*

## 3. The Relation Between the Roentgenologist and Other Members of the Profession—

*K. F. Kesmodel, Birmingham.*

## Surgery

## 1. Congenital Hypertrophic Pyloric Stenosis—

*W. R. Mecker, Mobile.*

## 2. Internal Injuries Without Penetrating Wounds—

*L. J. Johns, Birmingham.*

## 3. Drainage in Thoracic Empyema—

*Maurice J. Gelpi, New Orleans.*

## 4. Postoperative Pulmonary Complications—

*James F. Alison, Selma.*

## 5. The Differential Diagnosis of Symptoms Referable to the Hip Joint—

*Wyatt Roberts, Birmingham.*

## 6. The Treatment of Harelip and Cleft Palate—

*Marcus Skinner, Selma.*

## 7. Bacteriophage in the Treatment of Osteomyelitis and Other Wounds—

*Fred H. Albec, New York City.*

At the conclusion of the afternoon's program a motorcade will visit the Bellingrath azalea gardens on the river.

## Evening Session

## Thursday

Call to Order, 8:00 P. M.

Unfinished and Miscellaneous Business

## Scientific Papers

## 1. Surgical Treatment of Neuralgias—

*Adrian Taylor, Birmingham.*

Discussion: W. H. Blake, Jr., Sheffield, and E. W. Cawthon, Plateau.

## 2. Brill's Disease: Sporadic Typhus—

*C. P. Hayes, Elba.*

Discussion: W. A. Lewis, Enterprise, and Henry Green, Dothan.

## 3. Typhoid Carriers: Observations of Their Distribution—

*L. C. Havens, Montgomery.*

Discussion: D. G. Gill, Montgomery, and Chas. A. Mohr, Mobile.

## 4. Treatment of Hookworm—

*Merle E. Smith, America.*

Discussion: W. H. Abernethy, Troy, and W. C. Hatchett, Huntsville.

## 5. Physiologic and Pathologic Death—

*S. R. Benedict, Birmingham.*

## Fourth Day, Friday, April 22

Sitting as the Board of Health of the State of Alabama

Call to Order, 9:00 A. M.

## 1. Report of the Board of Censors:

(a) As a Board of Censors.

(b) As a Board of Medical Examiners.

(c) As a Committee of Public Health.

## 2. Revision of the Rolls.

## 3. Election and Installation of Officers.

Adjournment.



## SPECIAL INFORMATION

## SUGGESTIONS TO THOSE CONTRIBUTING PAPERS

The maximum time consumed by essayists must not exceed twenty minutes. This time limit however does not apply to invited guests. It is suggested that the salient features of papers be presented within this time, reserving the complete elaboration for publication in *The Journal*. Discussions will be limited to five minutes for each speaker.

Original double-spaced copies of all papers read before the Association must be deposited with the Secretary when read; otherwise, they will not be published.

During the discussion of papers, the speaker will please walk forward to the platform and announce his name and address distinctly.

Papers will be called in the order in which they appear on the program. Should a reader be absent when called, his paper will be passed, and called again when the program is concluded.

SECTION 2 OF AN IMPORTANT ORDINANCE  
ADOPTED 1923

Be it ordained by the Medical Association of the State of Alabama, That the Treasurer of each County Medical Society shall pay the Association the sum of four dollars for each delegate to which the County Society is entitled, whether said delegate is in attendance or not.

## CREDENTIALS OF DELEGATES

All delegates and alternates who propose to qualify as delegates from county societies must present to the Treasurer of the Association properly signed credentials when they register. Blanks for this purpose have been furnished to the Secretary of each County Society.

PROGRAM OF  
THE WOMAN'S AUXILIARY

## OFFICERS

## President

Mrs. J. D. Perdue..... Mobile

## President-Elect

Mrs. Estes Hargis..... Birmingham

## Vice-Presidents

Mrs. R. V. Taylor, Jr..... Mobile

Mrs. John Love..... Birmingham

Mrs. James Becton..... Birmingham

Mrs. Richard Grayson..... Selma

## Corresponding Secretary

Mrs. H. B. Dowling..... Mobile

## Recording Secretary

Mrs. C. A. Harris..... Bessemer

## Treasurer

Mrs. G. O. Segrest..... Mobile

## Historian

Mrs. Seale Harris, Sr..... Birmingham

## Advisory Committee

Dr. Seale Harris, Sr., *Chairman*

Dr. Toulmin Gaines

Dr. J. N. Baker

Tuesday, April 19

10:00 A. M.—Registration at the Battle House (not only Auxiliary members, but every visiting woman is requested to register).

5:00 P. M.—Meeting of the Executive Board at the Battle House.

Wednesday, April 20

Green Room of the Battle House

1. Call to order at 9:45 A. M. by the President—  
*Mrs. J. D. Perdue, Mobile.*
2. Welcome Greetings—  
*Dr. J. H. Dodson, President of the Mobile County Medical Society, Mobile.*  
*Mrs. J. U. Reaves, President of the Mobile County Auxiliary, Mobile.*
3. Response to the Welcome Greetings—  
*Mrs. Estes Hargis, Birmingham.*
4. Preventive Personal Hygiene—  
*Dr. E. S. Sledge, Mobile.*
5. The Story of the Jane Todd Crawford Memorial—  
*Mrs. J. P. Seales, Livingston.*
6. A Message from the Advisory Committee—  
*Dr. Seale Harris, Sr., Chairman, Birmingham.*
7. Work and Aims of the Woman's Auxiliary—  
*Mrs. W. C. Holmes, Foley.*
8. Business Meeting—
  1. Reading of the Minutes of the Last Meeting—  
*Mrs. C. A. Harris, Recording Secretary, Bessemer.*
  2. Report of the President—  
*Mrs. J. D. Perdue, Mobile.*
  3. Report of the Corresponding Secretary—  
*Mrs. H. B. Dowling, Mobile.*
  4. Reports of Vice-Presidents—  
*Mrs. R. V. Taylor, Jr., Mobile.*  
*Mrs. John Love, Birmingham.*  
*Mrs. James Becton, Birmingham.*  
*Mrs. Richard Grayson, Selma.*
  5. Report of the Treasurer—  
*Mrs. G. O. Segrest, Mobile.*
  6. Report of the Historian—  
*Mrs. Seale Harris, Sr., Birmingham.*
  7. Report of the Endowment Fund Committee—  
*Mrs. W. J. Barber, Chairman, Butler.*
  8. Reports of Delegates.
  9. Election of Officers.
  10. Announcements.
- 3:30 P. M.—Boat Ride.

Thursday, April 21

10:00 A. M.—Meeting of the New Executive Board at the Battle House.

1:00 P. M.—Luncheon.

3:00 P. M.—Drive.

## THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

## WHY THE COLLEGE OF COUNSELLORS SHOULD NOT BE ENLARGED

HENRY GREEN, M. D.

Dothan

Life Counsellor of the M. A. S. A.

One of the last messages sent by Cochran to this Association, which he had created and fostered, dealt with the College of Counsellors. He said in his "Word of Warning":

"The Medical Association of the State of Alabama has attained, under circumstances of very great embarrassment, a very high position of honor, efficiency, and influence. The secret of her success is the unrivalled excellence of her organization, and the thoroughness of her discipline, almost like that of an army. The principal elements of her power, the throbbing heart and the scheming brain that have made her great, are the College of Counsellors and the Board of Censors. If her power and prosperity are to continue these two institutions must be maintained without essential change. Two dangers confront the College of Counsellors—Counsellors always to be spelled with two ells in spite of the dictionaries. The first of these is the reduction of the annual dues; the second is the increase in the number of Counsellors composing the College.

"It would be a calamity to the Association to reduce the dues. We want Counsellors who are able and willing to spend money freely in our service. Money is an element of power and we cannot have too much of it. If any change is ever made in the amount of the annual dues of the Counsellors it should be done by increasing the amount to twenty-five dollars for each one of them. The time will come when this can be done.

"The number of active and paying Counsellors is now limited to one hundred. Under no circumstances and for no possible reasons, no matter how plausible they may seem should this number ever be increased. Ambitious men will advocate the increase in order that they may have a better chance to participate in the honors of the position;

and they will argue that as the number of doctors in the State increases the number of Counsellors should be increased in corresponding ratio. This argument is fallacious, and should not be allowed to influence the policy of the Association. The position is honorable now. With the lapse of time it will become incomparably more honorable. Why is a seat in the French Academy so eagerly coveted by the great men of France? Because the membership is limited to forty.

"I have inserted this word of warning here entirely on my own responsibility. I hope I will not in consequence be accused of presumption. I think I may claim to love the Association as no one else has or ever will. It may be that I shall not live long enough to edit another edition of the Book of Rules; and I have yielded to the inclination to make a record of my convictions to be read by those who may come after me".

At the last meeting of the Association which Dr. Sanders was privileged to attend as State Health Officer, in 1916, he discussed the formation and purposes of the College of Counsellors and suggested certain alterations in this body to meet changing and changed conditions. The following year the Association modified the suggestions which had been submitted by Dr. Sanders as an amendment to the Constitution, which resulted in the present classification of this body. It will thus be seen that both of these leaders viewed the College of Counsellors as a most vital and important part of the *public health machinery* of our organization. As a *scientific body* this selected group within the Association is entirely unnecessary and superfluous. Its need and importance is only to be seen in the fulfillment of the Association's *legal responsibilities* as the duly constituted *Board of Health* for the State. The members of this body are elected by the Association and are chosen because of their qualifications, loyalty and fitness and upon them are imposed certain duties and responsibilities not exacted of other mem-



bers. To be chosen a Counsellor in our Association should rightfully be viewed both as an honor and as a mark of devotion to the principles and purposes to which this Association has pledged itself. For good and wise reasons the membership of this group, as originally fixed in the Constitution at one hundred, the Association, throughout its fifty-nine years of life, has never seen fit to change. The group designated as "Life Counsellors" is a by-product, resulting from the Association's desire to reward a long period of useful and loyal service to its cause. Should this body of Life Counsellors become so large, as it now threatens to do, as to nullify one of the fundamental principles incorporated into our Constitution, presently to be mentioned, this Association should certainly take the necessary steps to correct it.

*The prime purpose in the creation of the College of Counsellors was to furnish to the legislative side of our organization the qualities of cohesiveness, permanency and stability so necessary to the public health machinery woven into it. The College of Counsellors might aptly be called the "Rock of Gibraltar" within the Association.*

What are the reasons for limiting its membership to one hundred?

To properly grasp what follows, one must put aside the thought which is usually uppermost in the minds of most members—namely the scientific aspects of the Association—and *think of it solely in terms of a medical legislature, created by law, to discharge the important duties of a State Board of Health.*

The membership in the Medical Association of the State of Alabama is now about 1,600. For so large a group to function in a legal manner, it must set up within itself a legislative body and to it delegate such authority and powers as are necessary to meet its legal responsibilities—in this instance, these responsibilities being the direction and control of all public health activities and of medical licensure within this State. This medical legislature, as now constructed, consists of *Delegates* and *Counsellors*, the potential voting strength of which is 281 and representing 143 Delegates and 138 Counsellors.

Each of the smallest counties, such as Coosa, Cleburne and Russell, with but four

members each, and many smaller counties such as Cherokee, Conecuh, Greene, Lowndes and others, with a membership ranging from five to fifteen each, are given a real and potent voice in the House of Delegates, where each of the sixty-seven counties, regardless of size, has a minimum representation of two delegates. The four largest counties of the State have representation in this body similar to that given them in the lower house of our State Legislature, with which, in many regards, our House of Delegates may be compared. The personnel comprising this branch of our legislative body and coming each year, fresh from the County Medical Societies, stand for and speak the wishes of each and every component part of the State organization. There seems to be a tendency among some of our members to ignore the fact that it was the deliberate intent, in framing our Constitution, to vest in this body *the majority of the voting strength* of the Association. It rests in this body now, and, in order to preserve democratic principles, it should continue to rest there.

The other branch of our medical legislature is represented by the College of Counsellors, the active membership of which is fixed by the Constitution at 100. This is the *fixed, permanent voting strength* of the Association, elected by its own members for a given number of years and might, not inaptly, be compared to the senatorial body of the State and Federal legislatures. The reason for having such a fixed and unchanging group within the organization, when viewed in its legal aspects, should become so immediately patent, as to need no further comment. If further argument should seem needed to justify the existence and importance of the College of Counsellors, it can be amply found in the recorded history of this Association, where the loyal members of this group will, many times, be seen battling for its safety and its principles. The final point remaining, is the *justification* for keeping its active membership at not greater than one hundred. No pen could more forcefully or beautifully present these reasons than has been done by Cochran in his "Word of Warning", quoted above. To these cogent reasons must be added one other, having a most important bearing on *the legislative equilibrium now existing*

between the two voting bodies. Should the membership in the College of Counsellors be increased by one-half, three-quarters or doubled, such action would immediately subvert one of the basic principles written into our Constitution, viz.: *the balance of power now vested in the House of Delegates.*

"Prudence, indeed, would dictate that government long established should not be changed for light and transient reasons". (From The Declaration of Independence—1776.)

### IMMUNIZATION ACTIVITIES OF HEALTH UNITS

J. N. BAKER, M. D.  
State Health Officer

In November of last year the State Health Officer made request of the various County Health Officers to procure an expression of opinion from their respective medical societies in regard to their immunization activities against preventable diseases.

These replies show, by an overwhelming majority, that the profession is fully aware of the need for such protection to all people, regardless of economic levels. They further clearly indicate that the doctors desire that the health units assume the responsibility for promotional and educational work, merely asking that group activities be confined as much as possible to the indigent class.

It is felt that out of these frank discussions between physicians and county health officers of this important question of immunization will come a far better understanding of the basic things involved. Every doctor today concedes that the public interest is paramount; but he also feels that his interests, by virtue of belonging to a group which is contributing to the solution of the problem, are likewise a public interest and consequently should not be ignored. In this view, which is proper and sound, the State Health Officer and the fifty-four affiliated county health units fully concur. One should never lose sight of the fact that some type of demonstration clinic is necessary in order to educate and show to the masses the value and safety of any given novel protective procedure. The efforts put forth by health workers are largely for this purpose and to sufficiently

popularize the procedure as to create a demand for a service to be ultimately supplied by the practicing physician, except in the case of the indigent. Health workers, more than all others, will welcome the time—which, surely, is not far distant—when this attitude of mind will be assumed by both physician and layman; for then their labors may be more profitably spent on problems which are more essentially of a public health nature. The profession at large, through an understanding and co-operative approach to all preventable disease, can materially speed up the arrival of such a happy day.

The prediction may safely be made that five years hence immunization practices will scarcely loom as a disturbing factor to the profession of this State.

Let us all, therefore, quickly "arrive".

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**How to Make a County Society Fruitful.**—After thorough organization has been effected the next concern is to make a society fruitful, that is, to make it accomplish the objects set forth in its constitution. This cannot be done without work—constant and well-directed work—but work that will prove immensely profitable, both in a professional and public health way.

The first and most fundamental essential of success is that frequent meetings be held, the more frequent, in reason, the better.

No society in the State should meet less frequently than once each month, and many can and should meet oftener. Among the numerous and great advantages that will be reaped by frequent meetings *one* is worthy of special mention, namely, that they will cure every real and imaginary defect in the *morale*, or harmony, of a society. Any lack of courage as to what the society can accomplish, or of cordiality that may exist between members, will soon vanish under frequent face-to-face meetings that not only inspire confidence, but afford each member an opportunity of learning that there is much more of good in the others than a less intimate acquaintanceship revealed.

But, to give more specific answer to the interrogatory as to how a society may be made fruitful, the following is submitted:

Make each meeting bear some substantial fruit, either scientific, sanitary, or social. That this can be done does not admit of a doubt. If *two* doctors agree to pursue a systematic course of study on scientific and practical medicine, and to meet at regular intervals for the purpose of aiding each other in analyzing the subjects studied, in sifting out the germs of truth therein and "fixing them" in their memories, and if this be continued year after year, will they not reap a rich harvest of profit both for themselves and their patients?

If two doctors can work together with profit, cannot four, or eight, or twenty, or any other number? Can they not reap a proportionately larger harvest?—*The Red Book.*



## DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF ADMINISTRATION

J. N. Baker, M. D.

State Health Officer in Charge

**Foreword:** In order that the physicians of the State may be familiar with the provisions of the Act of the 1931 Legislature providing for tuberculosis sanatoria, the bill is set forth below in its entirety.—  
J. N. B.

#### A BILL TO BE ENTITLED AN ACT

To protect the public health and welfare, to provide for the construction, maintenance and operation of hospitals and sanatoria for the treatment of tuberculosis, and to make appropriations for the building and maintenance of same.

*Be It Enacted by the Legislature of Alabama:*

Section 1. The Board of Revenue, or the Court of County Commissioners, or other governing body of any county in this State is hereby authorized to establish, maintain and operate a hospital or sanatorium for the treatment of tuberculosis in accordance with the terms and provisions of this Act.

Such Board of Revenue, or Court of County Commissioners, or other governing body of the county, subject to the conditions as set forth herein, shall designate the site on which said sanatorium is to be established and the sum or sums of money to be appropriated for the purchase of said site, and the improvements thereon, if any and for construction and equipment purposes. Immediately upon the taking of such action by the governing body of any county it shall be the duty of the clerk of said body to send and certify to the State Committee of Public Health a copy of the resolution or resolutions; whereupon the State Committee of Public Health shall, through its duly authorized representative, or representatives, inspect and pass upon the desirability of such site, and if appropriate, it shall co-operate with the Board of Revenue, or Court of County Commissioners or other governing body of the county, or with any committee thereof selected for such purposes or with the board of trustees appointed as hereinafter provided, in the preparation or selection of plans for the building or buildings to be erected, provided that no sanatorium to be erected under the provisions of this Act shall have provisions for room for less than twenty-five beds to be used for patients, and provided further that suitable arrangements shall be made in each sanatorium for the segregation of white and negro patients.

Any sanatorium heretofore or hereafter established which participates in the benefits of this Act must meet the following requirements of the State Committee of Public Health, to-wit: It

must be located at such point as that it will, in the judgment of said State Committee of Public Health, serve the interest of a population sufficiently large to insure the economic operation thereof; and it must be so equipped and operated as to conform to the modern standards set for the equipment and operation of tuberculosis sanatoria to be approved by the State Committee of Public Health.

Section 2. The Board of Revenue, or Court of County Commissioners, or other governing body of any county having jurisdiction, subject to the provisions of Section 1 of this Act, is hereby authorized and empowered to appropriate from the general funds of the county an amount or amounts sufficient for the purpose of purchasing the site, for construction, equipment and maintenance of a hospital or sanatorium for the treatment of tuberculosis; but, in no case shall the appropriation for the original purchase, construction, equipment and maintenance exceed in any one year an amount equal to one mill of the assessed value of the property in the county where the appropriation is made.

If deemed expedient by the governing body making the appropriation for establishing such a hospital or sanatorium contemplated by this Act, such appropriations may be continued for three consecutive years but no longer. When the appropriation is made it shall be set aside yearly as a special fund for the purchase of site, construction and equipment of the sanatorium authorized by the resolution. If project is abandoned the funds set aside shall be put back in the general fund after the expiration of five years.

Section 3. The Board of Revenue, or Court of County Commissioners, or other governing body of any county in which such sanatorium is to be established shall appoint a committee of five, all of whom shall be residents of county; one of whom shall be the county health officer, and one of whom shall be a reputable licensed doctor of said county; this committee shall be known as the board of trustees of the tuberculosis sanatorium of said county. In the first instance, one of such trustees shall serve for a period of one year, one shall serve for a period of two years, one for a period of three years and one for a period of four years, in each instance from and after the first day of January following his or her appointment. Thereafter, each trustee, except the county health officer, shall hold office for a period of four years from the date of expiration of the term for which his predecessor was appointed and until a successor is appointed. The term of service of the county health officer shall be a continuing one, so long as he remains the health officer of said county. For the transaction of business by this board, the presence of not less than three members shall be necessary to constitute a quorum. Each such trustee shall file his acceptance of office with the county clerk and shall also take and file with said clerk the constitutional oath of office. It shall be the duty of said board of trustees to co-operate and advise

with the State Committee of Public Health or its duly authorized representative and the county board of revenue, or with any committee selected thereby, in the establishing, erection and equipment of the sanatorium. As soon as such sanatorium is completed and equipped, the management and control thereof shall vest in said board of trustees, subject to the provisions of this Act. Said board of trustees shall organize by election of a chairman, a secretary and treasurer or a secretary-treasurer and shall adopt rules and regulations governing its procedure. Money for the purchase of site, construction and equipping of the sanatorium shall be paid out by the county treasurer on the order of said board of trustees, countersigned by the chairman and clerk of the Board of Revenue, the Court of County Commissioners, or other governing body of any county, or by a committee of said board or governing body selected by board for that purpose.

Section 4. Any two or more adjoining or contiguous counties within this State may co-operate for the establishment, maintenance and operation of a joint county sanatorium for the treatment of tuberculosis under the provisions of this Act. The Board of Revenue, or Court of County Commissioners, or other governing body of any county may appoint a committee to confer with a like committee similarly chosen by the board in any county or counties for the purpose of selecting a site for a joint sanatorium. At such meeting the committees present shall organize into a joint committee and shall select one of the members of such joint committee chairman and a second secretary. A full report of the results of such meeting shall be made to the Board of Revenue, or Court of County Commissioners, or other governing body of any county, of each county concerned at the next ensuing meeting thereof. Thereupon each said board of revenue, or court of county commissioners, or other governing body of any county, shall have the same power to take action with reference to the establishment, maintenance and operation of such joint county sanatorium as is granted by this Act with reference to the establishment of a sanatorium by a single county in so far as such provisions are applicable.

Section 5. In case the Boards of Revenue, or Courts of County Commissioners, or other governing bodies of two or more counties shall determine by separate action thereof that a joint sanatorium shall be established, it shall be the duty of each said board, or court, or body, to appoint a committee of its members for the purpose of co-operating with the State Committee of Public Health and with the board of trustees of said sanatorium in providing a site and in the construction and equipment of the necessary buildings and in conformity to the provisions set forth in Section 1 of this bill. Each board shall also select five residents and taxpayers of the county over which it has jurisdiction to serve as members of the board of trustees of the sanatorium, as set forth in Section 3. Said trustees shall be appointed for like terms and shall qualify in the same manner as is provided in Section 3 for the appointment and qualification of trustees of a county sanatorium. It shall be the duty of the

trustees so appointed from each county to meet jointly with like trustees from the other county or counties as soon as may be and to organize by the election of a chairman, a secretary, and a treasurer, or a secretary-treasurer. For the transaction of business by such joint board the presence of not less than three members of each interested county shall be necessary to constitute a quorum.

Section 6. The Board of Revenue, Court of County Commissioners, or other governing body of each county becoming a party to the erection of a joint sanatorium under the provisions of this Act may appropriate in the manner set forth in Section 2 of this bill, in any one year for establishing and for maintenance purpose a sum not exceeding one mill on each dollar of assessed valuation of said county. Such appropriation shall be a special fund, and shall be transmitted by the treasurer of the county in which it is collected to the treasurer of the county in which the sanatorium is to be established. All such moneys shall be and remain in a special fund, and be used solely for the purposes for which the appropriation was made: Provided, however, that moneys appropriated for construction purposes, and not needed therefor may be expended by the board of trustees for maintenance and operation. All moneys expended for purchase of site, construction, equipment, and installation of equipment of any joint sanatorium shall be paid out by the county treasurer for such fund in charge on the order of the board of trustees of such sanatorium.

Section 7. Plans and specifications for the construction and equipping of any sanatorium to be erected under the provisions of this Act shall be let by the board of trustees of said sanatorium, *subject to the approval of the State Committee of Public Health*. Such work may be let as an entirety or in sections as may be deemed most advantageous. In all cases where the cost of construction exceeds the sum of five hundred dollars, bids shall be advertised for in one or more newspapers published and circulating within the county or counties not less than two weeks prior to the date when bids are to be received. Subject to the provisions of this Act, the board of trustees concerned may adopt rules and regulations concerning the manner of advertising for bids and the letting of contracts. In all cases the right to reject any and all bids presented shall be reserved. Each contract let hereunder shall provide that the work shall be done subject to the approval of the board of trustees, and said board of trustees shall have the authority to employ such architects, engineers or other professional assistance that it deems necessary and fix the compensation therefor: Such compensation to be paid as set out in Section 3 for construction.

Section 8. The State Committee of Public Health is hereby authorized and directed to adopt and publish, in the same manner as rules and regulations of the State Department of Health are published, *rules and regulations governing the operation of county sanatoria*. It shall be the duty of the board of trustees of any such sanatorium to observe such rules and regulations. Wilful failure or refusal to do so shall constitute grounds



for removal. Subject to this Act and to such rules and regulations, each such board of trustees shall operate the sanatorium under its charge and shall employ a superintendent, a suitable number of nurses, and such other employees as may be necessary and may fix the compensation thereof. Such compensation shall be paid out of the maintenance fund of the sanatorium in the same manner as the salaries of other county employees are paid. Money to defray the expenses of maintenance and operation shall be paid by the county treasurer having such fund in his custody on the warrant of the president of the board of trustees of the sanatorium, countersigned by the secretary.

Section 9. Any sanatorium, or hospital now or hereafter established hereunder, desiring to share in the benefits of this Act, must make provision for the care of Alabama citizens who are not residents of such county or counties and must place at the disposal of the State Committee of Public Health for the use of such Alabama citizens aforesaid fifteen per cent. (15%) of the total bed capacity of such sanatorium or hospitals. It being the intent hereof that the county from which a patient, in indigent circumstances, comes, shall pay the difference remaining for the cost of such patient after the state subsidy has been deducted; should a patient from another county not be in indigent circumstances, said difference in cost after deducting the state subsidy shall be fixed by the board of trustees of the sanatorium receiving such patient. On the first day of each month the board of trustees, or the medical superintendent of the sanatorium, whether organized and established under the provisions of this Act or any other Act or Acts permitting counties to erect and maintain sanatoria for the treatment of tuberculosis, shall report to the State Committee of Public Health the number of patients treated during the preceding month, with such detailed information as said State Committee of Public Health may require. Such reports shall show specifically the number of patients treated with the number of days and the aggregate number of weeks of such treatment and shall be verified by the medical superintendent or by the president of the board of trustees. If accepted and approved by the State Health Officer, it shall be the duty of the latter official to certify to the State Auditor that the sanatorium in question has treated such number of patients for aggregate specified number of days. Thereupon the State Auditor, with the approval of the Governor, shall draw his warrant on the State Treasurer in favor of county treasurer having the funds of the sanatorium in his custody, for such amount as will constitute compensation for such patients on the basis of one dollar per day each; being the intent hereof that the State shall contribute towards the cost of maintaining and treating patients the sum of one dollar for each day of such care and treatment.

Nothing in this Act shall be construed to mean that any sanatorium established hereunder may not charge a person, who is not in indigent circumstances, a reasonable sum per week for care and treatment in such institution, which sum shall be agreed upon by the board of trustees.

Section 10. No member of the board of trustees of any sanatorium established and maintained hereunder shall be entitled to receive compensation for his services. Any such trustee, however, shall be reimbursed on account of any expense necessarily incurred by him in the performance of his official duties. All claims against the sanatorium shall be approved by the board of trustees thereof and paid in the manner hereinbefore indicated. Any vacancy occurring on a board of trustees shall be filled for the remainder of the term by the board of revenue, court of county commissioners, or other governing body of the county represented by such trustee. Each said board shall constitute a body corporate and it may accept donations and bequests, may purchase and hold property, and make such contract as may be necessary for the carrying out of the duties hereby imposed. All conveyances of real estate shall be taken in the name of the board of trustees in trust for the county or counties represented thereby.

Section 11. Prior to the regular October session in each year of the board of revenue, court of county commissioners, or other governing body or any county establishing or maintaining or assisting to establish or maintain sanatorium hereunder, it shall be the duty of the board of trustees of such sanatorium to make and present to the board a full and detailed report of the operations during the preceding year and of the receipts and disbursements. At the same time an estimate of the funds necessary to be appropriated in such county for the ensuing year shall be presented. Thereupon, said board, subject to the provision of this Act, shall appropriate such amount as may be necessary. In the case of the joint county sanatorium it shall be the duty of each board of revenue, court of county commissioners, or other governing body concerned to vote its proportionate share of the cost and maintenance of operation during the ensuing year, as estimated and determined by the board of trustees. In case any county or counties in which is located and maintained a sanatorium shall desire to appropriate more than the amount herein above provided, such appropriation shall not be made until the question shall have been submitted to the qualified electors of the county or counties effected at a general election held within the county in which said election there shall be written or printed on the ballot the amount of appropriation desired with spaces to indicate the will of the voter by the words "yes" or "no". If a majority of the electors shall indicate a desire to increase the appropriation, the appropriation shall be made and paid in the manner herein above provided.

Section 12. The State Committee of Public Health shall, through its duly authorized representative, inspect each sanatorium established hereunder once each quarter or oftener if it shall deem necessary. It may also require from the authorities in charge of such sanatorium reports from time to time concerning the operation thereof. It shall be the duty of the said State Committee of Public Health to make recommendations to the board of trustees and to the medical superintendent in charge of the sanatorium with respect to operation, treatment of patients, em-

ployees, and such other matters as affect the welfare of the patients and the general conduct of the institution. If any board of trustees, or medical superintendent, shall neglect to observe the rules and regulations of the State Committee of Public Health hereinbefore provided for, the State maintenance aid contemplated by Section 9 may in the discretion of said State Committee of Public Health be withheld until such rules and regulations are complied with.

Section 13. The Board of Revenue, or Court of County Commissioners, or other governing body of any county of this State not desiring to construct a sanatorium or hospital for the treatment of tuberculosis is hereby authorized to raise money by taxation for the aid and assistance of any hospital or sanatorium within this State and to secure the treatment of persons afflicted with tuberculosis, and may make agreements with the management or owners of such hospital or sanatorium for the treatment of indigent patients afflicted with tuberculosis. No money shall be raised, however, for the assistance of any private hospital under this section nor to provide for the treatment of patients at any hospital or sanatorium, unless said hospital or sanatorium shall be first inspected by the duly authorized representative of the State Committee of Public Health, and approved by it as a proper and suitable institution for the care and treatment of patients afflicted with tuberculosis. No patient shall be admitted to a hospital or sanatorium provided by this section until the application of such patient has been passed upon by the county health officer of the county or an authorized representative of the State Health Officer and approved by the State Health Officer himself.

Section 14. Whenever the Board of Revenue, Court of County Commissioners or other governing body of any county shall contract with the management or owners of any hospital or sanatorium for the treatment of persons afflicted with tuberculosis and such hospital or sanatorium shall have been approved by the State Health Officer, as provided in the preceding section, it shall be the duty of the county health officer, or other legally designated authority on the first day of each month to report to the State Health Officer the number of patients treated at any such sanatorium or county, with such detailed information as said health officer may require. Such reports shall show specifically the number of patients treated, any compensation paid by the county therefor, and the aggregate number of days of such treatment. Such reports shall be verified by the officer or officers making the same. Upon receipt and approval of such report by the State Health Officer, it shall be the duty of the latter official to certify to the State Auditor that the county in question has caused to be treated, without compensation to it, patients for an aggregate specified number of days based upon said report which report shall have been approved by the Governor. Thereupon the State Auditor shall draw his warrant on the State Treasury in favor of the county treasurer of such county for such amount as will constitute compensation for such patients on the basis of one dollar per day each,

it being the intent hereof that the State shall contribute towards the cost of maintaining and treating such patients the sum of one dollar for each day of such care and treatment.

Section 15. There is hereby appropriated from the State Treasury an amount sufficient to make the payments necessary arising under the terms of this Act in an amount not to exceed \$50,000 for the first year; \$75,000 for the second year; \$100,000 for the third year and \$150,000 for the fourth year; and thereafter a continuing sum of \$150,000 or so much thereof as may be necessary annually appropriated in order to put into effect the purpose of this Act.

Section 16. All laws or parts of laws in conflict with this Act are hereby repealed.

Section 17. This Act shall take effect immediately upon its passage and approval by the Governor.

## BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

### HOW CAN OUR PLAN FOR SAFEGUARDING THE LIVES OF CHILDBEARING WOMEN BE MADE SUCCESS- FUL?\*

To be successful our present plan needs to be expanded. It must be more than a summation of the teachings of science which are applicable to a solution of the problem. It must set up a practical method of applying these scientific principles under conditions of present-day life. It must be adjusted to the economic situation and so patterned as to fit all, regardless of social status.

Our plan must be in harmony with the best interpretations of professional ethics, medical, nursing, social service or family welfare. But more than all else at the present stage of its development our plan needs to be brought into line with the psychology of the average man and his wife. It must emphasize, even exaggerate, the joys and wonders of the 99 safe miles of the childbearing journey. The dangers of the last mile should perhaps not be mentioned at all, except to assure the expectant family that playing the game of hygiene throughout the relatively safe 99 miles will not only bring added comfort and zest to the daily life of the expectant mother but will do much to mitigate the

\*Third and last of a series dealing with maternal mortality. The first appeared in the February number; the second in March.



few unconquered hazards which beset the last long mile of her childbearing way and go far toward assuring the safety of the baby's first mile on life's journey.

### *What of the Co-Workers?*

It will be a long, hard educational row to hoe and the sooner interested professional groups and lay leaders quit looking for some magic formula, which shall make childbearing 100% safe, the sooner will a sound co-operative plan be evolved, which shall make motherhood safer and family life more stable and purposeful.

Any proposed plan to be successful must have the whole-hearted co-operation of parents, the entire medical profession, public health workers, family welfare agencies, and those experts who are competent to advise on systems of sound financing for community health services.

The plan must be acceptable, first to families, second to physicians, and subsequently to other interested professional groups. The eyes and thoughts of the plan-makers must be upon the family group more than upon the scientific works upon library shelves. Scientific fundamentals none the less must be the basis of the plan. The essential task of co-workers in this enterprise is to translate scientific facts into motives for action in the lives of everyday people; beginning, in every instance, just where the individual is in his thinking, and proceeding no faster than he is able to proceed.

Finally, the "Plan" must be understandable and workable from a community standpoint. It is at this point that the importance of lay participation makes itself especially felt.

### *Initial Aims*

The major objective of our successful plan will be, it seems to me, an effort to change the popular psychology with regard to problems of maternity and infancy; to win people away from the "trust to luck" policy and induce them to learn to play the game of family hygiene, according to accepted, scientific rules, and above all, to like the game. It is conceivable that it might even excel in thrills the games of contract bridge, golf, fortune telling, and

seeking the pot of gold at the end of the rainbow.

The co-operative plan-makers, professional, financial, lay and official should all have an opportunity to study and approve this objective. Ordinarily, changes of this sort come rather slowly and professional groups involved have plenty of time to gradually adjust their practices to new mental attitudes.

It is somewhat disturbing to contemplate the confusion that might arise if the changed outlook which we are advocating should come suddenly and find our professional groups unprepared. Tremendous readjustments will become necessary in medical practice. Nurses will need a broader grasp both of scientific information and its application. The fund of general information necessary to family case workers will be immeasurably increased.

The essential content of the plan can be summarized as: education in the hygiene of maternity and infancy; a modern system of financing these hygiene needs for the average family; education and utilization of lay leaders; education of public officials and promotion of community action. It is easy to enumerate items which should go into the plan but with these items before us it is not clear just how they are to be molded into a unified whole. Should they be fitted together as a carpenter joins his building materials or should they, perhaps, be approached in the spirit of the born cook who knows how to make a deliciously smooth boiled custard but admits that occasionally something inadvertently happens to curdle it. Personally, I shall vote for the boiled custard approach. This will require the utmost of personal attention and devotion plus the warmth and artistry of leadership. If our plan turns out smooth and usable we'll clasp each other by the hand with shining eyes. If it curdles, we'll try again.

If, somehow, a greatly enlarged and enriched interpretation of maternity can be brought home to parents perhaps even some of the natural human desire for mystery, romance, and prophecy can be met and satisfied by this experience. Then will the truths of science no longer need to compete with the vaporings of ignorance and humbuggery and childbearing will be safer for both mothers and babies.

## BUREAU OF VITAL STATISTICS

W. T. Fales, Director  
Ethel Hawley, Acting Director

PROVISIONAL DEATH RATES FOR 1931  
COMPARED WITH THE FINAL FIG-  
URES FOR 1930 AND 1931

Indications are that the death rate for 1931 will be the lowest of any year since 1927. In spite of a rise in the influenza and pneumonia death rate in the spring, the pneumonia rate for the whole year is the lowest since 1927 and the influenza rate is only slightly higher than in 1930.

The reduction in the rate for infant diarrhea, pellagra, and the general infant mortality rate is very striking in view of the fact that death rates from these causes would be expected to show an increase after two years of economic stress. That they have not, would seem to be an indication of the effectiveness of public health measures.

The rate for heart disease and nephritis is considerably less than in 1930. In fact, heart disease has shown a decrease for the past three years.

It must be borne in mind that these are provisional figures and that there may be a slight increase in rates when the final tabulations are made.

## PROVISIONAL VITAL STATISTICS\*

## Alabama 1931

	1931	1930	1929
Birth Rate per 1,000 Pop.	23.3	24.0	23.9
Death Rate per 1,000 Pop.	10.6	11.5	12.4
Infant Mortality Rate per 1,000 Live Births	65.0	72.5	73.9
Maternal Mortality Rate per 1,000 Live Births	7.8	8.9	9.1
Causes                      Death Rate per 100,000 Population			
Typhoid fever	7.0	7.9	7.5
Smallpox	—	**	—
Measles	6.4	3.1	2.4
Scarlet fever	1.1	1.4	1.4
Whooping cough	3.4	9.5	9.8
Diphtheria	7.8	7.1	9.6
Influenza	40.3	35.5	119.8
Pneumonia, all forms	83.0	85.8	87.5
Poliomyelitis	0.9	0.8	1.0
Tetanus	1.4	1.5	1.9
Tuberculosis, all forms	85.7	86.0	85.7
Tuberculosis, pulmonary	77.3	77.4	77.7
Malaria	7.8	12.2	16.4
Cancer, all forms	53.6	53.8	51.3
Diabetes mellitus	10.5	8.8	9.0
Pellagra	16.4	23.9	25.5
Cerebral hemorrhage, apoplexy	60.7	65.5	64.5
Diseases of heart	117.0	134.0	136.2
Diarrhea and enteritis:			
Under 2 years	20.0	31.2	27.4
2 years and over	7.0	11.2	8.8
Nephritis	88.8	100.4	95.8
Puerperal state, total	18.3	21.3	20.0
Puerperal septicemia	5.5	4.2	7.6
Congenital malformation	7.2	7.9	8.8
Congenital debility and other diseases of early infancy	56.3	71.9	71.1
Senility	17.0	20.6	23.6
Suicides	7.8	8.2	7.4

Homicides	21.7	20.5	19.7
Accidental burns	6.8	7.7	8.0
Accidental drownings	4.1	4.3	6.1
Accidental traumatism by firearms	4.4	3.5	3.8
Mine accidents	1.7	3.4	4.0
Railroad accidents	3.2	4.0	5.3
Automobile accidents	18.3	18.6	17.1
Other external causes	20.6	24.1	26.1
Other specified causes	154.4	162.9	161.2
Ill-defined and unknown causes	96.0	88.1	90.7

\*The rates for 1931 are based on provisional figures. Rates for other years are based on final figures according to state tabulation of deaths.

\*\*Number too small to compute.

## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

THE INTERPRETATION AND SIGNIFICANCE OF RESULTS OF BACTERIOLOGICAL TESTS OF SAMPLES FROM PUBLIC WATER SUPPLIES

Contributed by H. G. Menke, Assistant Sanitary Engineer

Bacteriological examination of samples of water are not made for the presence or absence of any specific water-borne disease organisms. Suitable equipment and knowledge for such routine technique has not been developed nor as a matter of fact is it wholly necessary. An organism, numerous and comparatively easy to isolate and identify, is used as an indicator of contamination or of possible contamination. This organism is known as the *Bacillus coli*.

The colon bacillus is found in the digestive tract of all warm blooded animals. It is the predominating organism in their feces, and hence is freely distributed throughout nature. It is, therefore, present in most surface waters.

Bacteria causing enteric diseases live in the same environment as *B. coli* and because they travel by the same route, the analyst assumes that where *B. coli* are present disease organisms may also be found. Hence, the presence of *B. coli* indicates a possible avenue of entrance for disease bacteria. All routine bacteriological examinations then furnish an indication only of a satisfactory or unsatisfactory water. They do not determine whether the particular sample analyzed would or would not cause disease.

On a report form used by the Laboratories of the State Board of Health is the heading which reads, "Bacteria per cc.—At 37° C". In the report rendered, there is inserted in this column the number of bacteria found in a cubic centimeter of the water tested.



The form has a further heading—"Gas in Lactose Broth". *B. coli* is one of a group of organisms which has the ability to form gas in lactose broth. Gas formation is, therefore, used as a presumptive test for their presence. Varying quantities of the sample are placed in the broth and the number and quantities forming gas serve as an indicator of the intensity of presumed contamination. In the report there may be fractions such as 3/5, 1/1, and 0/1, which indicate that three of five tubes, each inoculated with ten cc. of the sample tested, showed the presence of gas; also that the tube inoculated with one cc. showed gas formation. The smaller portion, 0.1 cc., is used to further indicate the concentration of the organisms and in the above assumed example are absent.

The final heading on the form is "Bacillus Coli". As previously stated, *B. coli* is but one of a group of organisms having the ability to form gas in lactose broth. When gas is found in any of the tubes, it is desirable to more definitely determine if *B. coli* is present, but on un-iced samples the examination is carried no further than this stage. On iced samples additional tests are made to prove that the gas-forming organism is *B. coli*. These results are entered under the last heading, "Bacillus Coli", as "positive" or "negative".

### *Significance of Results*

The number of bacteria reported present per cc. of water is an indication of the water's cleanliness. Not all bacteria found in water are harmful, in fact, most are not.

Clean water, however, is not a medium for the growth of bacteria and when they are present in large numbers, the indication is that the water has been contaminated with some form of organic matter. Bacteria do not live long in pure water and, therefore, a low bacterial count indicates that pollution is light or that sufficient time has elapsed since the introduction for many bacteria to die and fortunately the disease bacteria are the least viable.

Therefore, it is considered that counts in excess of 100 indicate an unsatisfactory water, though this figure is merely relative.

What has been said in regard to the number of bacteria present in the water applies to the number of "gas formers" pres-

ent. If the laws of chance or probability and error could be disregarded, the results of the tests for gas could be definitely stated in numbers of gas-forming bacteria and would bear a numerical ratio to the total number of bacteria present. In a series of examinations this ratio can be approximated. The presence of these bacteria in large numbers is more directly indicative of dangerous contamination than is indicated by the total number of bacteria for here the field has been narrowed down to that in which *B. coli* is found. However, there is an inter-relationship interpreted by experience in examining reports. Even if the confirmatory test for *B. coli* is negative, a large number of gas formers usually indicates an unsatisfactory water. Should *B. coli* be proved to be present, then it is probable that the contamination is of fecal origin. If these results persist over a series of samplings, the likelihood is strengthened. Such contamination may or may not be of human origin. Sanitary investigations should be made and proper action taken to either prevent or remove the contamination.

From the above, it is clearly seen that a knowledge of the surroundings of the water supply is necessary to interpret the full significance of the results. Identical laboratory results on samples from two different supplies might have different significance because of different conditions under which the water is being derived. A sanitary survey, coupled with the bacteriological examination of samples, then will rather clearly indicate when a supply is or is not dangerous.

Copies of results of all bacteriological examinations are placed in the Bureau files. Specific information desired on any report may be had upon request to the Bureau of Engineering. The significance of any such results is dependent partly upon a knowledge of the sanitary surroundings of the supply, as already stated, and it is for this reason that the Bureau of Engineering is called upon to interpret results rather than the Laboratory making the examination, as the Bureau is familiar with the physical characteristics of the various public water supplies.

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*"Money spent for the Public Health is an Investment, not an Expenditure."*

## BUREAU OF INSPECTION

C. A. Abele, Director

## MILK REGULATIONS

Notice has been received of the adoption by the Elmore County Board of Health of "The State Board of Health Regulations Governing the Production, Handling, and Sale of Milk and Certain Milk Products" on February 9, 1932. This is the twenty-seventh county board of health which has adopted these regulations.

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

## VENEREAL DISEASE CLINICS DURING 1931

The report of the Division of Venereal Disease Control for the year 1931 has recently been compiled. This report includes the work done in the various free clinics in the State, together with the statistics from the co-operative clinics. Certain very interesting facts are brought out in this report.

(1) There were 207 physicians serving as co-operative clinicians during the year.

(2) These co-operative clinicians reported:

- (a) 3,790 new cases of syphilis.
- (b) 1,082 new cases of gonorrhea.
- (c) 65 new cases of chancroid.
- (d) 28,646 doses of neoarsphenamine administered.
- (e) 21,361 doses of bismuth or mercury administered.

(3) There were 15 free clinics in operation.

(4) These free clinics reported:

- (a) 7,583 new cases of syphilis.
- (b) 2,793 new cases of gonorrhea.
- (c) 139 new cases of chancroid.
- (d) 58,962 doses of neoarsphenamine administered.
- (e) 70,278 doses of bismuth or mercury administered.

(5) Of the total new cases of syphilis admitted to both free and co-operative clinics:

- (a) 15% were primary.
- (b) 55% were secondary.
- (c) 75% were negroes.

(6) Of the total new cases of gonorrhea admitted to both free and co-operative clinics:

(a) 52% were white.

(b) 82% were males.

(7) Wassermanns made (All State laboratories) 88,568.

These figures give some idea of the demands made by the indigent and semi-indigent venereals on the medical profession and health departments. To prevent abuse of the free clinics, and to safeguard the physician, the State Committee of Public Health at one of its meetings adopted a resolution that no patient be admitted to a free clinic except on the recommendation of a practicing physician. This regulation has been enforced.

## CURRENT STATISTICS

State Department of Health

PROVISIONAL MORTALITY STATISTICS  
Alabama, January 1932

	Number of Deaths Registered Jan., 1932			Annual Rate per 100,000 Population		
	White	Black	Total	Jan. 1932	Jan. 1931	Jan. 1930
ALL CAUSES .....	1099	1040	2139	931.3	1030.0	1052.7
Typhoid fever .....	6	6	12	5.2	1.3	2.7
Smallpox .....	1		1	0.4		
Measles .....					4.4	1.3
Scarlet fever .....	3		3	1.3	1.7	0.4
Whooping cough .....	8	3	11	4.8	3.1	7.1
Diphtheria .....	17	1	18	7.8	8.3	6.2
Influenza .....	54	39	93	40.5	64.3	66.4
Pneumonia, all forms .....	115	89	204	88.8	101.1	120.8
Poliomyelitis .....						0.4
Tetanus .....	3		3	1.3	1.3	1.3
Tuberculosis, all forms .....	51	118	169	73.6	70.0	78.3
Tuberculosis, pulmonary .....	42	110	152	66.2	65.7	71.3
Malaria .....		4	4	1.7	2.2	2.2
Cancer, all forms .....	84	38	122	53.1	44.6	42.9
Diabetes mellitus .....	12	7	19	8.3	9.2	10.2
Pellagra .....	7	18	25	10.9	10.5	17.3
Cerebral hemorrhage, apoplexy .....	75	50	125	54.4	49.0	52.2
Diseases of heart .....	155	102	257	111.9	105.9	118.6
Diarrhea and enteritis:						
Under 2 years .....	2	11	13	5.7	7.0	6.2
2 years and over .....	5	3	8	3.5	4.8	4.4
Nephritis .....	89	78	167	72.7	90.2	86.3
Puerperal state, total .....	10	19	29	12.6	15.3	16.4
Puerperal septicemia .....	2	3	5	2.2	5.2	3.1
Congenital malformation .....	10	2	12	5.2	5.2	5.3
Congenital debility and other diseases of early infancy .....	59	25	84	36.6	42.5	59.3
Senility .....	13	8	21	9.1	14.9	19.9
Suicides .....	17	5	22	9.6	4.8	8.4
Homicides .....	14	31	45	19.6	14.4	8.8
Accidental burns .....	10	3	13	5.7	13.6	12.4
Accidental drownings .....	6	1	7	3.0	1.7	0.9
Accidental traumatism by firearms .....	4	4	8	3.5	3.9	7.1
Mine accidents .....	1	3	4	1.7	3.5	6.2
Railroad accidents .....	8	2	10	4.3	3.1	2.2
Automobile accidents .....	18	5	23	10.0	17.5	12.8
Other external causes .....	28	17	45	19.6	14.0	22.1
Other specified causes .....	154	165	219	95.3	144.9	149.2
Ill-defined and unknown causes .....	60	181	241	104.9	107.7	96.5



**\*\*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA**

	1932 Feb.	1932 Jan.	Total Cases to Date This Year	Last Year
Typhoid	40	79	119	61
Malaria	39	65	104	122
Smallpox	11	194	205	41
Measles	8	39	47	4008
Scarlet fever	89	183	272	422
Whooping cough	93	118	211	111
Diphtheria	114	193	307	306
Tuberculosis	319	351	670	736
Pellagra	15	16	31	35
Meningitis	6	8	14	39
Tetanus	1	5	6	4
Influenza	297	324	621	2000
Dengue	0	0	0	0
Poliomyelitis	4	4	8	9
Pneumonia	429	325	754	1225
Chickenpox	150	183	333	839
Mumps	101	127	228	306
Encephalitis	0	2	2	9
Ophthalmia neonatorum	0	2	2	4
Typhus	3	6	9	5
Trachoma	1	0	1	1
Tularemia	7	4	11	3
Undulant fever	0	0	0	2
Rabies	0	0	0	0
Syphilis (private cases)	135	159	294	258
Gonorrhoïd (private cases)	5	7	12	9
Chanorhea (private cases)	103	154	257	261

\*As reported by physicians and including deaths not reported as cases.

## Book Abstracts and Reviews

**A Thousand Marriages. A Medical Study in Sex Adjustment.** By Robert Latou Dickinson and Lura Beam, with foreword by Havelock Ellis. 1931. The Williams and Wilkins Co., publishers. Baltimore. 482 pages. Cloth. \$5.00.

Over a period of fifty years, a gynecologist and obstetrician of note kept detailed records of the sex life of his patients. A thousand such cases forms the basis of this study. An attempt is made to get actual facts concerning the sex habits of normal married couples and those showing maladjustments, exclusive of perversions which form the basis of Kraft-Ebings' excellent presentation. There is a chapter on normal well-mated cases, 200 cases of this type serving as a control. Then there is an analysis of the bridal period, of frigidity, of wives more passionate than their husbands, of dyspareunia, of widows and their sex problems, of the influence of fear on enjoyment of sexual life, and of unclassified maladjustments. The physical factor as a cause of separation and divorce, the fear of pregnancy, the influence of religion and education on the attitude toward sex, the advantages of premarital instruction of brides, auto-erotism in women—all of these topics are discussed. There is a vast store of valuable facts in this volume and it is only regretted that it had to be written by a statistician rather than by the doctor who treated the patient. The one chapter that was written by Dr. Dickinson, dealing with the physical evidence of sex experience, is well written, but much of the book is spoiled by more or less meaningless statistics. This volume is one of a series being published by the National Committee on Maternal Health.

The facts in this book, like pearls, lie under an ocean of statistical data, but to one who appreciates their value, they are worth the effort of diving for them.

C. K. W.

Noguchi, by Gustav Eckstein. Harper & Brothers, publishers. New York and London. 1931. \$5.00.

In the fall of 1920, Hans Zinser's class in bacteriology was seated in the big amphitheatre of the old 59th street building which housed the College of Physicians and Surgeons, Columbia University. There was a moment of hurried whispering and then silence. Noguchi had been introduced by the Professor. He began to talk rapidly, clearly, concisely, in almost perfect English but with a definite foreign accent. His black hair seemed to bristle above his high forehead. His dark, deep-set eyes sparkled with animation as the words came from his mouth in rapid staccato. His lecture was on the subject of the growth of the spirochaeta pallida and he was demonstrating in his long culture tubes pure growths of these organisms. From one pocket he drew his cultures, from another fresh tubes of media, from a third an alcohol lamp and from a fourth his platinum loop. He seemed more like a magician than a scientist and we waited with eager anticipation to see him pull a pigeon or rabbit from our own pockets. In his enthusiasm, he made no attempt to conceal the stub fingers of his left hand. This deformity seemed to offer him no inconvenience and he handled the tubes quickly and gracefully. This was my first sight of the famous Noguchi.

The pictures which those students saw from their seat in the amphitheatre was like a single view in a cinema. Eckstein has painted a true moving picture so vividly, that the impression will, for many years, remain fresh in the reader's mind. He tells of the birth of a little Japanese boy in the home of the poorest of farmers—the father a profligate and drunkard, the mother a remarkable woman, accustomed to suffering, hardships, and hard work. He tells how in his early childhood the little boy fell into a fire and burned his hand. We had been told that one day when Noguchi was working on the problem of snake venom, a cobra had bitten the finger of his left hand and the scientist had promptly chopped off the finger. Eckstein tells of Noguchi's early education, how he was teased by his school mates because of his bad hand, how he decided to become a physician, his meagre medical education, his work in Tokyo, his constant borrowing, his profligate spending, his love of women and drink, his contributions to the vocabulary of Japanese dentistry, his trip to China to study the plague and then the turning point in his life—his coming to America. We are told how he met Simon Flexner and how Weir Mitchell put him to work studying venom. We are told of how he joined the Rockefeller Institute, why he over-estimated Madsen's age, his first occidental joke, his contribution of a chapter on snake venom in Osler's Medicine. Then comes his work on trachoma and syphilis, his modification of the Wassermann reaction, his discovery of the butyric acid reaction and the lutein reaction. Then he is successful in growing spirochaeta. He marries Mazie, continues to be improvident and plays chess with the same enthusiasm that he devotes to his research. His book on syphilis is published, he finds the spirochaeta pallida in the brains of paretics and

proves that paralytic dementia is of syphilitic origin.

Then comes recognition, he is invited to Germany, where he addresses many distinguished bodies. He is decorated by two governments and receives the Imperial Prize of the Japanese Academy. He is made a member of the Rockefeller Institute. He learns that he has a bad heart but continues to work relentlessly. He returns to Japan in triumph, visits his old mother, and sees his Japanese sweetheart, married and the mother of several children. Back in America he works hard, gets typhoid fever and a perforation of the intestine but recovers without operation. Then a relapse, and acute appendicitis, operation and slow convalescence. Already he speaks Japanese, Chinese, French, German, and English. During his convalescence he masters Spanish and goes to Ecuador to study yellow-fever. He succeeds in growing leptospira which he thinks is the cause of yellow-fever and experiments in the prevention of this disease with vaccine. He pursues his study in Mexico and Peru, learns to speak Portuguese and continues his work in Brazil where he also takes up the study of flagellates. Over and over again during his career, he has worked on the subject of Rocky Mountain spotted fever but has never succeeded in isolating the causative organism. Then he proves that the Bartonella is the cause of oroya fever and verruca peruana. He masters the Dutch language in two and a half days and then, as a climax and a final chapter in his life, assailed on many sides by investigators who doubted the accuracy of his studies on yellow-fever, he sails to Africa to study the disease there and in the little village of Accra he contracts yellow-fever and dies.

Truly these are Gargantuan accomplishments for a poor little Japanese boy who has finally risen to be the prince of microbe hunters. Noguchi was a great man and Eckstein's biography is a great book.

C. K. W.

## DENTISTRY IN RELATION TO OBSTETRICS

(Continued from page 395)

ance during early years as these are important factors in dental decay. Prenatal care is better than care at the nursery age, and is the time to evaluate the importance of the deciduous teeth and lay the foundation for healthy and sound permanent teeth. Prior to the birth of the child the mother must assume the responsibility of giving good or bad teeth to her offspring, hence the importance of proper diet during pregnancy is very evident. This is particularly true from the second to the fourth month, since the main thing that occurs during this period of gestation is that of calcification of the child's teeth,

which begins in the seventeenth week of intra-uterine life.

During the White House Conference on Child Health and Protection it was repeatedly stated that the dentist did not contact the child early enough. Evidence submitted above would seem to indicate that contact must be established in the prenatal period, preferably by the physician. Western A. Price, in a most interesting report of the research work he is doing under the auspices of the American Dental Association, states that 700 samples of dairy products per month are being received from many countries throughout the world for an analysis for vitamin activators and mineral volume. He states that many of the plant-eating animals of the world are subject to periodic disturbances, considered in the past to be mysterious diseases of unknown cause, but now known to be deficiency diseases. These have resulted in a large number of deaths of domestic animals in various countries. He describes a common disease among cattle in Texas, locally known as loin disease. Such disturbances are associated with an abnormal craving for minerals. They eat ravenously old bones even though they be putrid. Examinations of soil and grass from the locality show a startling deficiency of these minerals. In some countries these conditions become so severe that when cattle and lambs are allowed to run together the cattle will kill and eat the lambs. When we recognize that human beings are chemical machines like cows and are dependent on food intake for maintenance we realize that imbalance will develop from inadequate diet. If the mother cannot obtain a sufficient amount of minerals and activators both during gestation and lactation she will deplete her body.

I can only touch this most interesting report in high places but hope I have thrown sufficient light upon the subject to convince you that all flesh is grass but all grass is not rich enough to supply the needs of development and repair of the human body.

It would be presumptuous in me to suggest or lay out a diet plan for your patients but I do most earnestly hope that I have aroused your interest in helping to prevent one, if not the most universal, disease of civilization—dental caries.



## Truth About Medicines

### NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

**Diphtheria Toxin for Schick Test Diluted Ready for Use—Lilly.**—A diphtheria toxin (New and Nonofficial Remedies, 1931, p. 383) diluted with physiological solution of sodium chloride containing 0.1 per cent gelatin and having a pH of 7.8 to 8.0. It is marketed in packages of one vial containing sufficient for ten tests, and in one vial containing sufficient for 100 tests. Eli Lilly & Co., Indianapolis.

**Normal Horse Serum (1:10 Dilution) for the Conjunctival Test.**—Normal horse serum (New and Nonofficial Remedies, 1931, p. 346), 1 part, diluted with physiological solution of sodium chloride, nine parts. Marketed in packages of one vial with dropper outfit. Lederle Laboratories, Inc., Pearl River, N. Y.

**Scarlet Fever Streptococcus Antitoxin (Refined and Concentrated).**—It is prepared by the method of Drs. Dick by license of the Scarlet Fever Committee, Inc. It is marketed in packages of one syringe containing 2,000 units (prophylactic dose), and in packages of one syringe containing 10,000 units (therapeutic dose). Gilliland Laboratories, Inc., Marietta, Pa.

**Trichloroethylene.**—Trichlorethylene. —The actions of trichloroethylene have not been investigated comprehensively. It appears to have a selective action on the sensory endings of the trigeminal nerve, whereby it affords relief in trigeminal neuralgia. Different individuals seem to show a wide variation of susceptibility to this action. Large doses cause narcosis, and excessive doses cause death. The liquid is irritant and should not come in contact with the nose when inhaled.

**Trichloroethylene-Calco.**—A brand of trichloroethylene—N. N. R. It is supplied in the form of tubes containing 1 cc. Calco Chemical Co., Inc., Bound Brook, N. J. (Jour. A. M. A., March 5, 1932, p. 815.)

**Decholin.**—Dehydrocholic Acid.—An oxidation product of cholic acid derived from natural bile acids. For a discussion of ac-

tions and uses see Bile Salts and Bile Salt Compounds (New and Nonofficial Remedies, 1931, p. 92). Decholin is proposed for use in functional insufficiency of the liver; to outline the bile ducts at operation and in relieving the possible occurrence of postoperative symptoms; in cholecystography, to accelerate the appearance of the gallbladder shadow and to hasten removal of residual tetraiodophenolphthalein from the biliary apparatus; and in cardiac decompensation with hepatic congestions, cirrhosis of the liver and similar disturbances of hepatic function with ascites. The drug is also supplied in the form of  $3\frac{3}{4}$  grain tablets. Riedel-de Haen, Inc., New York.

**Decholin Sodium.**—Sodium dehydrocholate.—The sodium salt of dehydrocholic acid. For a discussion of the actions and uses, see Bile Salts and Bile Salt Compounds (New and Nonofficial Remedies, 1931, p. 92). The actions and uses are the same as those of decholin. It is administered intravenously and is supplied in ampoules containing 10 cc. of a five and twenty per cent solution. Riadel-de Haen, Inc., New York.

**Tuberculin B. F. (Bovine).**—A tuberculin Denys (New and Nonofficial Remedies, 1931, p. 369) prepared with bovine cultures of *Bacterium tuberculosis*. It is marketed in 1 cc. vials; also in serial dilutions. The Cutter Laboratory, Berkeley, Calif. (Jour. A. M. A., March 12, 1932, p. 887.)

### FOODS

**General Decisions of the Committee on Foods.**—Chocolate and Cocoa Products: Special recommendations for their use by children are not permissible for foods consisting largely of chocolate or cocoa which contain considerable quantities of theobromine and caffeine. Declaration of Added Salt or Sugar in Sieved Vegetables or Fruits Intended For Infant or Invalid Feeding or For Special Diets: These should be given appropriate and prominent declaration. Gelatin: There is no satisfactory evidence that gelatin increases the digestibility of milk or milk products. "Health Feed" Claims: The term "health food" and equivalent claims are misleading. Mastication Claims: Mastication is not an aid to health of teeth and gums. Fruit Juices: Whether liquid, frozen or dried, they shall be prepared and packed to preserve their natural vitamin values. Sulphur Dioxide: Small

quantities are permissible in fruit products specially prepared for infants or children. Tonic Claims: The term "tonic" or its inflected forms are not permissible in food advertising. "Sterile", "Sterilized" and "Sterilization": These terms shall be used in food advertising in their correct scientific significance. Vitamin and Mineral Content of Fruits and Vegetables: Sieved fruits or vegetables prepared for the feeding of infants and children shall retain in the highest degree possible these constituents. Vitamin Claims in Food Advertising: Indefinite or general vitamin claims are misleading. Vitamin Content of Tomato Juice: It shall retain in the highest degree possible the vitamin content of the raw juice. Vitamin Fortification of Foods: Tentatively no objection is taken to reasonable fortification. (Jour. A. M. A., March 26, 1932, p. 1087.)

#### PROPAGANDA FOR REFORM

Inulin.—Inulin is a polysaccharide carbohydrate that resembles starch. It occurs in plants as a reserve carbohydrate in a few species that are edible. Foremost is the so-called Jerusalem artichoke, *Helianthus tuberosus*. Years ago attempts were made to feed Jerusalem artichokes to patients with diabetes because it had been found that the sugar output was not increased thereby. The assumption from such observations, however, that inulin can be utilized satisfactorily by the diabetic patient is by no means justified from such data. Obviously, any carbohydrate that cannot be readily digested would fail to be absorbed and accordingly fail to increase the sugar output. Despite the scientific evidence tending to diminish the probability of successful application of inulin-bearing plants to human nutrition, a number of capable investigators have concluded that Jerusalem artichokes actually improve the tolerance of patients as well as supply some energy that is directly utilized in the diabetic metabolism. Recent investigators believe that the reputed therapeutic value of Jerusalem artichokes in the diet of the diabetic patient, reported frequently by physicians from their personal experience, is based too often on uncontrolled observations and is a result both of over-enthusiasm on the part of the observer and of the tendency of human nature to anticipate results, even at the expense of erroneous con-

clusions. (Jour. A. M. A., February 6, 1932, p. 483.)

Absorption Through Sinus Mucosa.—There are occasions when it is desired to use drugs in certain of the evaginations of the alimentary canal specifically for their local influence; under these conditions the possibility of absorption into the systemic circulation becomes of considerable importance. An investigation of the absorption from sinus mucosa has recently been reported from which it is apparent that absorption of drugs and certain therapeutic agents from the nasal sinus and nasal cavity either does not occur or exhibits a low degree of efficiency. The experimental evidence leads to the conclusion that highly toxic substances may be used in the treatment of sinus disease without great danger of absorption. However, these observations should be associated primarily with normal intact mucous membrane. (Jour. A. M. A., March 19, 1932, p. 996.)

Effect of Digitalis Bodies on the Vomiting Reflex.—A moderately toxic dose of digitalis bodies induces attacks of vomiting, which continue and become more intense as the dose is increased. The vomiting may stop for several hours and then recur after the drug has been discontinued. However, the vomiting may cease as the drug is continued and other toxic effects appear in the form of premature contractions of the heart or bigeminal rhythm. An experimental study undertaken to determine if it was possible for digitalis bodies to abolish this emetic action of the drugs, while at the same time increasing the extent of the cardiac poisoning, indicates that physicians should be cautious in relying on nausea and vomiting as a measure of the degree of cardiac poisoning. The continued use of large doses of digitalis bodies may depress the vomiting reflex and at the same time increase the intensity of the cardiac poisoning. (Jour. A. M. A., March 12, 1932, p. 893.)

Dermal Absorption of Salicylates.—Salicyl esters such as methyl salicylate (oil of wintergreen) are commonly prescribed as constituents of ointments, liniments and local applications, on the assumption that they possess a greater skin penetration owing to their lipoid solubility, than do other salicylates. The amount of salicyl absorbed



under these conditions would appear nevertheless to be too small for definite systemic effects. The salicyl compounds offer a good opportunity for testing the comparative importance of lipid and water solubility, and of the chemical reaction (basicity and acidity) in dermal absorption. A recent study indicates that lipid solubility may not be as important as some other factors. Moderate degrees of chemical reaction (basicity and acidity), possessed by substances, appear to be more important than lipid solubility for penetration of the skin. Alkalinity, which softens the skin, and acidity, which apparently hardens it, are more important than simple solution in the fatty secretion of the skin. (Jour. A. M. A., February 20, 1932, p. 643.)

**The Testicular Hormone.**—Experimental and clinical evidence, as well as numerous studies of transplantations, indicates clearly that the testes possess one or more endocrine functions. In the past the criteria used for determining the effects of the extracts on castrated animals were of doubtful value but more trustworthy methods have been elaborated. While the exact chemical nature of the hormone is not known, some of the chemical properties have been determined. The most active and probably purest preparation thus far obtained is one in which a dose of 0.01 mg. of the active material per capon daily causes distinct comb growth. The product acts best when injected subcutaneously or intramuscularly; the dose for action by mouth is at least ten times as high. Thus far there has been no indication that the product can be of any value in restoring "vigor" to the aged or neurasthenic. However, if there is an indication for its use and if the dosage in man is comparable to that effective in the capon, the daily injection for a man weighing 150 pounds would have to be an amount equivalent to 5 pounds of bull's testis or 2 gallons of normal male urine. If taken by mouth, the dosage presumably would have to be much larger. (Jour. A. M. A., February 27, 1932, p. 738.)

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### *Miscellany*

#### DROPLET INFECTION AND PUERPERAL FEVER

The importance of droplet infection from the throat or nose of the attendant in the

causation of puerperal fever has recently received considerable attention. The first case in which the infection of the patient was actually traced to the medical attendant occurred in University College Hospital in London, England, in 1929. The case was fully reported by Nixon and Wright, and briefly it was as follows:

A district case was delivered by forceps by the outdoor obstetric assistant. The patient developed acute pneumococcal infection due to a Type I pneumococcus, and died on the fifth day. The throats of 11 people who at one time or another had been in contact with the patient were examined, and all failed to show suspicious organisms, except that of the obstetric assistant who had applied forceps and in whose throat was found Type I pneumococcus which was presumably the source of the infection. This work was afterwards confirmed by Smith of Aberdeen who, in a report issued in the present year on "The Causation and Source of Infection in Puerperal Fever," traced the source of infection in 18 cases and found that in 11 the infection, due to *Streptococcus haemolyticus*, originated in the throat or nose of the doctor, nurse or student in attendance.

These two papers, therefore, prove conclusively that masks are as essential in midwifery as they are in general surgical work. Since 1929 every doctor, student or nurse in University College Hospital coming into proximity to a patient in labor must wear an effective mask, whether on the district or in hospital. Since this rule was made, in 1929, we have had no death nor any serious case of puerperal infection.

In Germany the danger of droplet infection is so well recognized that in some places the nurses wear masks even while feeding or bathing young babies. Catarrhal infections in infancy are to be dreaded, as we all know; in the words of Dr. Shirley Wynne, Health Commissioner of New York City, "a little cold in a big person often results in a big cold in a little person". A simple precautionary measure, such as a mask, has therefore, much to commend it; nor need it be made on an elaborate pattern to be effective. Two loops of tape may be stitched to the ends of an oblong strip of folded gauze, and these loops passed over the ears of the nurse.—Maternity and Child Welfare, London.

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## BACTERIOPHAGE\*

### ITS NATURE AND ITS THERAPEUTIC APPLICATION

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Opelika

Bacteriophage is a principle which destroys and dissolves bacteria. During the process of destroying bacteria, it increases many thousand fold. This latter property renders bacteriophage unique.

Bacteriophage is widely distributed in nature, occurring in animal bodies, in intestinal and urinary discharges, in sewage, and in contaminated surface streams. Its method of preparation will further illustrate its characteristics. A small amount of sewage is sterilized by filtration through a Berkefeld filter. A few drops of this filtrate are added to a young broth culture of bacteria, say of staphylococci. After several hours in the incubator, it will be observed that the previously cloudy culture has become clear. Add a drop of this clarified or lysed culture to a second broth culture of staphylococci. The second broth culture likewise becomes clear, and the experiment can thus be continued indefinitely. The principle is often so concentrated in a lysed culture that one billionth of a cubic centimeter is sufficient to produce lysis of a fresh culture.

Cultures lysed by bacteriophage, even though clear and transparent, may not be absolutely sterile. For that reason, it is necessary to sterilize the previously cloudy broth by filtration before it can be used in therapeutics. Bacteriophage of commerce then is merely the filtrate of a broth culture previously lysed by bacteriophage. When

bacteria surviving the action of bacteriophage are transferred to fresh culture media and are grown, they are found to be resistant to lysis. In some manner, these survivors have become immune to the bacteriophage.

Bacteriophage is usually specific for definite organisms. For instance, one bacteriophage will lyse only typhoid bacilli, another only certain strains of colon bacilli and so on.

This lysis of bacteria, connected with the enormous increase in the lytic principle as lysis takes place, is one of the most unusual phenomena in the whole realm of biological science. We know hundreds of chemicals which destroy bacteria. Also, there are chemicals and immune bodies which dissolve bacteria. But none of these substances increases many thousand fold as it acts, as does bacteriophage. This latter property renders bacteriophage absolutely different from other bactericidal substances.

The nature of this extraordinary principle is not definitely known. Some workers believe that it is an unusual kind of ferment which, as it dissolves bacteria, stimulates the bacteria to manufacture more of the ferment. However, its property of limitless increase in quantity under suitable conditions brings to mind the fact that living things also behave in the same way. In fact, d'Herelle<sup>1</sup>, of Yale University, is the leader of a school of thought which believes that bacteriophage is a living ultramicroscopic virus, parasitic upon bacteria exactly as bacteria are parasitic upon higher forms of life. It is useless to pursue this subject of the nature of bacteriophage further, other than to point out that no one has as yet definitely disproved d'Herelle's contention that it is living. Perhaps the prob-

\*Read before the Association in annual session, Mobile, April 19, 1932.



lem will not be solved until there is a more uniform and more generally accepted definition of what constitutes life.

Surely it appears that a substance with such unique bacteriolytic properties would be of value in the treatment and prevention of diseases. D'Herelle has also been an ardent champion of this possibility. He considered that bacteriophage was the major factor concerned with the struggle against infections, far more important than immune bodies elaborated by the infected host. He built a most attractive hypothesis, according to which not only disease but also health was contagious. A patient with typhoid fever, for instance, had only to acquire bacteriophage in an accidental manner from another person or else to drink purposely a small quantity of typhoid bacteriophage. The bacteriophage would find a suitable pabulum in the typhoid bacilli of the host's body, would destroy some of them, would go on increasing as it destroyed them, until finally the infection was overcome. According to him, epidemics of Asiatic cholera can be stopped merely by pouring cholera bacteriophage in the wells from which the people in the infected district obtain their water supply. Although d'Herelle has in no essential way modified these contentions which he first published over ten years ago, other workers have not been able to confirm all his observations.

It has been demonstrated that bacteriophage does not act in the animal body with the same directness as in the test-tube. Applebaum and MacNeal<sup>2</sup> have shown that the presence of pus and blood interferes with it at least to some extent. However, in some experiments that were reported by me<sup>3</sup> several years ago, it was found that bacteriophage can save the life of a proportion of animals injected with an otherwise fatal dose of colon bacilli. The antiviral of Besredka<sup>4</sup>, tested under exactly the same experimental conditions, was without effect. It was necessary to inject bacteriophage practically simultaneously with the organisms. Even with this limitation, however, the results were considerably better than could have been obtained with chemical germicides. As a matter of fact, in another paper<sup>5</sup> it was shown that bacteriophage was theoretically superior to chemi-

cals such as phenol, mercurochrome, etc., for when the chemicals were sufficiently concentrated to destroy bacteria, there was a resulting necrosis of the tissue of the animal. It is also known that an antibody, such as anti-pneumococcus serum, presumably effective in therapeutics, must be injected simultaneously with the bacteria in order to demonstrate any lifesaving effect in animals. Further, these animal experiments may not tell the whole story in regard to bacteriophage. The organisms used were relatively avirulent and large doses were required to produce any sort of lesion whatever. If it ever becomes possible to test bacteriophage in animals infected with more virulent organisms, it is possible that very much more favorable results will be obtained.

It may also be pointed<sup>6</sup> out that I failed to obtain any very definite evidence of benefit from bacteriophage in experimental staphylococcus and streptococcus skin infections in rabbits. Here, again, though, it must be emphasized that the lesions were in no way comparable to human infections.

The final decision in regard to the value of bacteriophage in therapeutics must rest not on theoretical contentions in regard to its place in immunity nor even upon animal experiments, but upon actually observed results following treatment. Fortunately its use has been extensive enough during the past several years to warrant some definite conclusions.

It may be said immediately that bacteriophage has proved disappointing in the treatment of staphylococcus septicemia. This has been the experience of Rice<sup>7</sup>, of Hauduroy<sup>8</sup>, and is even admitted freely by d'Herelle. By analogy, no benefit can be expected in streptococcus septicemia or in puerperal sepsis. Likewise, in typhoid fever, the results obtained by Hauduroy show that nothing definite can be expected from the use of bacteriophage in this disease. There is much difference of opinion as to the value of bacteriophage in bacillary dysentery. D'Herelle constantly reiterates the statement that in Brazil bacteriophage has supplanted all other methods in the treatment of this disease and that the results have been eminently satisfactory. The results from the use of bacteriophage in the treatment of colon bacillus infec-

tions of the genito-urinary tract have not been especially encouraging, as noted by MacNeal<sup>9</sup>. Fortunately, plague and Asiatic cholera are not at the present time problems in this country, so we can omit any discussion of d'Herelle's views as to their efficacy in these conditions.

There is one type of infection, however, in which practically all observers agree that bacteriophage is of value. This is a localised lesion due to staphylococci so situated that bacteriophage can be directly injected into the lesion or can be applied to the lesion in the form of moist dressings.

Several years ago I had occasion to treat ten individuals with severe furuncles with local application of staphylococcus bacteriophage. In every instance there was a striking and immediate relief of pain. Liquefaction of the exudate, drainage, and healing of the lesion were all very much more rapid than could have been anticipated if only the usual treatment had been followed.

The method used was simply the pouring of bacteriophage on the lesion, and then applying a dressing of gauze moistened with bacteriophage. About 10 cc of bacteriophage filtrate was used at each treatment. The dressing was renewed daily. As soon as the wound looked clean, bacteriophage was omitted, and dry dressings or dressings with simple ointments were used. Bacteriophage used in this manner seemed to have a definitely stimulating effect on granulations in abscess cavities. In a few instances where the lesion had not ruptured when first seen,  $\frac{1}{4}$  to  $\frac{1}{2}$  cc of bacteriophage was injected directly into the abscess. This usually caused considerable momentary pain to the patient, but the rapid liquefaction and drainage thereby obtained seemed to justify the procedure.

My own experience has been similar to that of a number of other workers. Among these authors may be cited Larkum<sup>10</sup> and Rice<sup>7</sup>. Rice's experience is considerably more extensive than my own. Besides carbuncles and furuncles, he treated osteomyelitis, leg ulcers, impetigo, and so on. He found that cotton pledgets soaked in bacteriophage and placed in the external auditory canal were particularly satisfactory in the treatment of furunculosis of the external auditory canal. I think that most

oto-laryngologists would be willing to state that by this fact alone bacteriophage would fully justify itself. Rice stresses the fact that bacteriophage does not replace necessary surgical measures. For instance, in osteomyelitis, sequestra should be removed in the usual way, and then bacteriophage applied to hasten healing and to prevent extension. Albee<sup>11</sup> has also found bacteriophage an aid in osteomyelitis.

Lynch<sup>12</sup> states that wet bacteriophage dressings sometimes have a spectacular effect on wound infections. Bruynoghe<sup>13</sup> and Hauduroy<sup>8</sup> report similar experiences. Cipollaro<sup>14</sup> and Alderson<sup>15</sup> have found bacteriophage of value in dermatologic practice in pustular eczema, in sycosis vulgaris, and in impetigo. MacNeal states that bacteriophage may actually be life-saving in bullous impetigo of infants.

Some authors not only apply bacteriophage locally but also inject it subcutaneously at a distance from the lesion exactly as bacterial vaccines are used. This may possibly be advantageous when the lesions are so numerous that they cannot be treated individually by local dressings. The most important consideration, however, is local applications wherever possible. Rice also is of the opinion that local application is essential. Bacteriophage should never be injected intravenously as the reactions produced in this manner are too dangerous.

In treating staphylococcus infections it is possible to use a stock bacteriophage prepared by a central laboratory or by a commercial firm. This is because certain strains of staphylococcus bacteriophage are polyvalent, that is, are active against practically all staphylococci. My own observations, as well as those of Rice, were carried out with such a stock bacteriophage.

#### SUMMARY

The nature of bacteriophage is not definitely known, although its properties suggest that it may be a filtrable virus parasitic upon bacteria.

Its use does not appear to influence the course of septicemia and genito-urinary infections. Its value in dysentery, cholera, and plague has not been definitely ascertained.

Bacteriophage is of definite benefit in the treatment of staphylococcus infections



so situated that local dressings moistened with bacteriophage can be applied. Among conditions so amenable to treatment are abscesses, furuncles, carbuncles, osteomyelitis, impetigo, and furunculosis of the external auditory canal.

In treating such infections, good results are obtained with the use of stock staphylococcus bacteriophage.

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#### VERTIGO\*

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The general practitioner is constantly confronted with cases of "dizziness," and yet it is surely not overstating the fact to say that at best he can only guess at its clinical significance. Those suffering from it are at times so desperate that they would be willing to go any length in order to obtain relief. "The stability of the earth is one of the most fundamental facts of our experience. Therefore, if an earthquake shakes the very ground under his feet man is astounded and feels that the foundations for his reason are being snatched away."

Doctors often speak in a general and indefinite way of "intestinal" or "stomach" vertigo, dizzy spells from refractive errors, from Bright's disease and other systemic disturbances without giving a thought to the real mechanism of its production. Above all it has been impossible to know, in any given case, whether the vertigo was due to functional or organic cause and still less to recognize whether the dizziness was of trivial significance or whether it was the forerunner of some grave affection.

The ear is the most important organ in the maintenance of balance and the investigation of the factors mentioned above is therefore primarily a problem for the otologist. For many centuries man was credited with only five special senses, and then the sixth or "muscle, joint and splanchnic sense" was recognized. More recent studies of the internal ear have shown conclusively that the equilibratory portion of the ear constitutes a seventh sense which has been termed the kinetic-static sense. The kinetic-static function of the labyrinth is a separate sense just as truly as the sense of hearing or the sense of sight, and this labyrinth has for its *sole* function the maintenance of balance. Perfect equilibrium is the result of harmonious co-operation of the first, sixth and seventh senses. After impairment or loss of one of these senses compensation may take place to a certain extent. Full compensation, however, cannot be attained unless two of these three remain unimpaired, and perversion of any

\*Read at a recent meeting of the Mobile County Medical Society.

one of them may be much more disturbing than its loss.

The general practitioner should always bear in mind that in addition to disease in the ear itself, vertigo may be produced by any systemic disease capable of producing toxins or by mechanical conditions, which in turn have the power of interfering with the internal ear or its intracranial pathways. It is this mechanism which in the final analysis keeps the cerebrum continuously informed of one's position in space and one's relation to surrounding objects. In consideration of these facts, to speak of the role that the ear and its ultimate tracts plays in the production of vertigo is like speaking of the role the heart plays in the production of cardiac murmurs. Therefore, just as we examine the heart and blood pressure to determine the condition of the cardiovascular system, or as we test the urine in suspected cases of nephritis or diabetes, or as we have a Wassermann test made in cases suspected of syphilis, just so the ear tests enable us to analyze the apparatus responsible for dizziness. The results of such tests properly interpreted by the otologist afford the general practitioner invaluable aid in his own diagnosis of systemic disease, and of equal importance, enables him to give an accurate prognosis as to the duration of vertigo and the seriousness of the condition producing it. Few occurrences could be more embarrassing to a general practitioner than to make the mistake of guessing that a patient's vertigo is due to biliousness and will clear up after a purgative, and then discovering six months later that the vertigo was continuous and progressive, and that a competitor had correctly diagnosed some grave intracranial disease. It is only the very rare case of vertigo which remains obscure after careful ear tests, and in most cases the diagnosis becomes clear and simple as to whether the condition is organic or functional, local or systemic, peripheral or central.

It would be impossible here to consider in detail all the conditions which might produce vertigo, and since the mechanism of its production is essentially the same it is only necessary to mention a few of them. Seasickness, airsickness, syphilis, nephritis, diabetes, pernicious anemia, gastro-intesti-

nal intoxication, mumps, scarlet fever, diphtheria, brain tumor and cerebral hemorrhage have no doubt been recognized by all of you as associated with vertigo. It has been known for years that the syphilitic toxin shows a marked affinity for the eighth nerve, and actual impairment of hearing or even deafness has been observed in many cases very early in the disease. Ear tests have been reported as having been the means of almost positive diagnosis of syphilis before the appearance of secondary lesions or a positive blood Wassermann. It is certain that in many cases vestibular tests have shown involvement of the eighth nerve long before the spinal or other cranial nerves were involved. Many of you have no doubt observed profound vertigo, nausea, vomiting and loss of equilibrium in cases of nephritis or diabetes or other diseases involving the vascular system. These are the so-called Meniere's disease and are due to the sudden destruction of a part or whole of one labyrinth as a result of hemorrhage or serous effusion into it.

Without going into tiresome detail I will briefly outline the method of examination of the labyrinth and its intracranial pathways and will consider the information which we may expect to obtain as a result of this examination.

Tests of the vestibular or kinetic-static portion of the bony labyrinth are always combined with examination of the cochlear or auditory portion. For the vestibular tests we routinely use the turning chair of Barany supplemented in some cases by the caloric tests as advocated by Rinne and others. Examination of the cochlear function is made by the audiometer with some use of the old familiar tuning forks and other devices. These combined tests are necessary on account of the definitely divided function of the eighth cranial nerve into vestibular and auditory uses. This nerve is closely connected with certain centers in the medulla, pons, three pairs of cerebellar peduncles, cerebellum, cerebral crura and the posterior portions of the first and second temporal convolutions, and the response to stimulation of the eighth nerve is therefore seen in the reaction produced by these centers. For the purpose of this paper there will be no further consideration



of the response to stimulation of the cochlear portion of the labyrinth, since such tests are only for the purpose of confirming certain other reactions or for more definite localization of a demonstrated lesion. In the vestibular tests we are therefore concerned with the reaction to stimulation of that part of the eighth nerve in its relation to the third, fourth and sixth nerve and other special centers in the intracranial substance. These reactions are nystagmus, vertigo, and past pointing, all of which may be induced in the normal individual by turning or caloric tests. Absence or disturbance of the known normal of these reactions enables us to determine the part of the vestibulo-cerebello-cerebrospinal tract involved, and certain variations of these reactions differentiate between functional, or toxic, and organic conditions. One or all of these reactions may of course be present spontaneously, in which case we have still more data for diagnostic purposes. I will only go into a brief consideration of these reactions as induced by tests. These reactions to artificial stimulus may be normal, absent, diminished or exaggerated.

Nystagmus is essentially an involuntary reaction and gives the index of the conductive and reactive power of the vestibulo-ocular tract only, which includes only the labyrinth, eighth cranial nerve, medulla, pons, cerebral cruri and nerves of the extra-ocular muscles.

Vertigo is a subjective and therefore cerebral reaction, dependent upon the vestibulo-cerebello-cerebral tract which includes the entire pathway mentioned (vestibulo-cerebello-cerebro-spinal) except the spinal portion.

Past pointing is a cerebral reaction to stimulus and therefore involves the consideration of the entire tract including the spinal pathway. Disturbances of this reaction therefore present the greatest difficulty in localization. It is possible, however, by separate tests of each of the horizontal and vertical canals and consideration of other findings to arrive at definite conclusions as to the probable area of involvement.

From the knowledge of the tracts involved in each of these reactions to stimulus it is now apparent that roughly speaking the following points are true:

1. Marked day to day changes in all reactions, or normal reactions, usually indicate a functional or toxic disturbance.
2. Abnormal responses as to all three stimulation phenomena denote a peripheral involvement; viz, the labyrinth itself or the eighth cranial nerve.
3. Variation from the normal in only one or two of the reactions is indicative of some intracranial or spinal lesion. Further and usually accurate localization is then possible by consideration of the type and degree of variation together with other ear or cranial nerve tests.

The following reports of cases seen by me illustrate each of these three general classifications:

Case 1—Sam R., age 20, when first seen in 1920, stated that his right ear had been discharging off and on since infancy. About an hour before coming into the office he was shaving himself when he was startled by a loud noise in an adjoining room. He wheeled to the right, became dizzy, fell to the floor and was unconscious for a few minutes. Since that time he has felt slightly "dizzy" and because he had been warned by an otologist that vertigo might be a dangerous sign he came in immediately. Examination showed a complete destruction of the right ear drum with a slight muco-purulent exudate in the middle ear. Cochlear tests showed greatly impaired hearing on the right side. The fistula test was negative and there was no spontaneous nystagmus, vertigo or past pointing to be demonstrated. At that time no Barany turning chair was available so I did the caloric vestibular tests. Nystagmus, vertigo and past pointing were normal and a diagnosis of a functional vertigo due to fainting was made. In this case a highly neurotic type of patient had extensive middle ear disease, became dizzy, fell and was unconscious. The extremely important problem was to determine between two suppositions.

1. The sudden noise causing him to turn sharply *toward the diseased ear* brought into play a labyrinth which had at last been invaded by adjacent disease, the patient became dizzy, fell and was unconscious from concussion. In such an event a *radical mastoid* was immediately imperative to save life.

2. The sudden and startling noise to such an individual might have been sufficient through fright to produce a cerebral anemia and fainting, in which case vertigo was his last conscious feeling, and treatment or operation was no more imperative than before this attack.

Fortunately for a beginner in otology and for the patient, the diagnosis was evidently correct since this man was living and well ten years later.

Case 2—Mr. F. E. C., age 30, when first seen in 1930 gave the following history: Nine days

ago he received a fall while at work and struck the back of his head on something. He thinks he was unconscious for a few moments and was so dizzy immediately afterward that he had to go home and to bed where he has remained. Late in the afternoon of the day of injury he noticed deafness in the right ear and a loud "roaring in his head." This "roaring" has remained unchanged. The dizziness is some better but he says he is still unable to walk or stand without aid. Examination reveals that this patient walks with a very unsteady gait and that there is a practically healed abrasion just below and slightly posterior to the right mastoid tip. The right drum is slightly hyperemic but otherwise negative on inspection. Weber and other tuning fork tests with audiometer test show marked impairment of hearing, especially for the higher tones, indicating nerve or labyrinthine involvement. Turning tests to the right show nystagmus, vertigo and past pointing to be normal, but on turning to the left there is a marked and proportionate impairment of all three reactions. A diagnosis was made of injury (from hemorrhage or fracture in the petrous part of the temporal bone) to the labyrinth or eighth cranial nerve. The prognosis was favorable as to complete recovery from vertigo but it was stated that hearing would not improve and that the tinnitus would continue about the same.

In this case, which concerned industrial compensation, our diagnosis of a true injury as against malingering, and a peripheral injury as against a fracture of the base of the skull or intracranial hemorrhage, was important in an adjustment of the damage, and after a second examination both parties were so convinced of the correctness of the prognosis that a settlement was easily made.

Case 3—Mr. J. T. D., age 62, gives the history that while at work one week ago he became very dizzy and had to sit down but did not fall. Vertigo has continued up to the present time. Examination revealed that the ears were practically normal. There was a slight spontaneous horizontal nystagmus on looking to the right. Turning tests to the right showed only an absence of past pointing with both arms. Turning to the left showed normal nystagmus, vertigo and past pointing. Since the abnormal reactions to stimulus were unilateral and on that side were disproportionate, a central lesion was evident, and since there was no involvement of the closely adjacent centers of the other cranial nerves in the brain stem, it was concluded that the lesion was in the left cerebellar hemisphere itself in the region of the outward and inward pointing centers. In view of the sudden onset it was considered that the lesion was probably hemorrhagic, and when this man was referred to his family physician a very high systolic blood pressure was found.

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**Cancer of the Rectum:** Approximately 60 per cent of all intestinal cancers are in the rectum. Carcinoma here, as elsewhere in the body, is a local lesion in the beginning and is amenable to surgical removal with a good prospect of permanent cure.—*G. V. Brindley, South. M. J. XXV:441 (May) 1932.*

## AN IMPROVED TECHNIQUE FOR PERINEAL REPAIR IN THE PRESENCE OF RECTAL PATHOLOGY

By

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In the performance of hemorrhoidectomy or in an operation for the cure of rectovaginal fistula, a perineorrhaphy is often indicated. In a case of rectovaginal fistula, this type of operation is useless where the rectum is substituted by a badly infected tubular stricture with fibrous agglutination of fascial planes.

In the execution of this operation a surgeon who places his patient in the lithotomy posture with feet in stirrups and thighs widely apart, has experienced the distortion of the operative field. Under a general anesthetic, this distortion is further exaggerated by reason of added pelvic congestion. Also, with the thighs widely apart, difficulty may be encountered when attempting to appose the separated levatores ani fibres.

It occurred to me to perform this operation with the patient in the ventral-prone posture. In this position, the field is drained of blood and the thighs are apposed, this latter fact permitting easy apposition of levator muscles. Regional anesthesia, either extra-dural or intra-dural sacral, gives complete relaxation and facilitates differentiation of tissue planes. Very little bleeding obscures the operative field. With the patient in this posture and pelvis elevated 15 cm. upon a pillow, I have found, by lowering the plane of body 15 degrees or more and slightly elevating the thighs above the horizontal, the field of operation is placed in a maximal surgical position in the same fashion that a laparotomy wound is exposed. Also, assistants are in a helpful relationship.

The method of suture of levator muscles is the other essential improvement in technique. It is an established fact that sutured muscle in these operations tends to break down about the tenth day. I believe this is because of strangulation by right-angled sutures. I have adopted the plan of placing No. 2 doubled chromic catgut through the muscles in line with the muscle fibers. In this way, strangulation will



not occur and the needle is never directed towards the rectum. These sutures are interrupted and the number is governed by the degree of tissue separation. With thighs lying closely together, the levatores fall into apposition without tension.

An uncomplicated technique is employed throughout. The mucosa and skin are closed with a running stitch of plain catgut. Redundant vaginal mucosa is not removed but tucked back above the newly made perineal floor.

In the case of coexisting hemorrhoids, these are then removed by a ligature procedure. In my experience this additional surgery has not caused infection. The perineal tissues, like the perianal and perirectal tissues, are resistant to infection. If accurate dissection of fascial planes without trauma is employed, careful hemostasis observed and strangulation of deep tissues avoided, the sutured skin will quickly seal and remain sealed until danger of infection from without has passed.

I have employed this technique in a total of 17 cases. Four of these cases were selected cases of rectovaginal fistula. Thirteen were hemorrhoids associated with rectocele. In the case of rectovaginal fistula it may be necessary to cut through the sphincter, creating the equivalent of a complete tear. These fibers are then sutured in the process of operation. At the conclusion of the operation for rectovaginal fistula, a complete sphincterotomy should be performed, preferably through the external sphincter fibers in the right posterior quadrant.

The deep structures have not broken down in a single instance of this series of cases.

In the performance of perineal repair, with this technique, easy manipulation and accurate differentiation of tissues will prove to be an enchantment seldom encountered in this operation.

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**Foreign Body in the Lung in Young Children:** In infants and young children who have aspirated a foreign body, certain problems of treatment occasionally arise which are not often seen in older children. Because of the age of the patient and the size of the airway, the margin of safety is reduced. The postoperative care can, in great measure, be facilitated by a consideration of the findings and in selection of the type of operation.  
—*Arbuckle, South. M. J. XXV:456 (May) 1932.*

## THE DOCTOR, HIS OFFICE AND THE PATIENT\*

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Birmingham

*"Take care to remember you are a Roman—  
Have a care you are not too much of a Caesar."*

Such an admonition from the philosopher-writer would be a most appropriate inscription over the entrance to every physician's office. Reduced to a more commonplace thought the above quotation could well be phrased to read: Take care to remember you are human—Have a care you are not too much of a tyrant. An excellent tonic for the physician and a comforting reassurance for the patient.

Education and special training qualify the physician as a leader. A liberal conception of the humanities qualify him as a counselor. A humanizing understanding qualifies him as a confidant. This trinity of ambitious and enviable virtues stamps him as a patron of the human race and invokes upon him an endless service to mankind. The physician, early in his career, learns to be submissive to such demands of the lay fraternity and lives a life that justifies a strict and ungrudging adherence to such a ministry. The physician's life is conceded to be one of unceasing endeavor, wisely directed. He is a product developed by the intrinsic value of natural capacity and the coordinated application, with systematic skill, of the means acquired by every-day experience and trained observation. The precept of his life is based upon the fact that he recognizes that every man justifies his right to live in this world by using his best efforts to promote its progress. He knows that life is progress and feels the present is tribute to the future and what has been is coming again. Surely, secured with the abundant reassurance of the foregoing philosophy, fortified with an ever-increasing storehouse of natural and acquired talents and rich in the inheritance of the formulas and works of the immortal masters and teachers in medicine, the present-day physician should receive the inspiration to work out the inevitable apotheosis of humanity. In the promotion and actual construction of such a

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\*Read at a public meeting of the Calhoun County Medical Society, Anniston, November 3, 1931.

temple of professional achievement, the real physician must realize that there are successes that prove to be direst failures. The success resting simply upon the ornate structure of scientific skill must crumble in the dust of time and be consigned to the grave with the victor. It has been remarked that good deeds live after the man. The physician that lives in and with his fellow man, enjoying the feeling that comes with faith and trust and hope, shares the unmeasured success of the patriot, partakes of the vast sea of beautitudes of life, inscribes his works upon the hearts of men, contributes his mighty portion toward the betterment and salvation of his fellow man.

Faith and trust and hope—these are the silent or the expressed emotions of the applicant for the office confessional. Service and fairness and help should be the instant and righteous response. The first bonds of such an amalgamated association are based upon the one and only worthwhile principle of life—human sympathy—and these bonds are always at a premium. Faith in human endeavor; trust in the individual; hope in applied remedies constitute for the physician a definite and unequivocal program of service and ethics. These relate not only to his healing art but involve the measure of his conduct, the standard of moral turpitude. What avail-eth a doctor to score a brilliant triumph over disease if, at the same time, he blasts the faith and trust and hope imposed in him as a man, as a defender of morals, as a sponsor of ethics?

The doctor's office is his castle and in it he is supreme. For the patient it is a confessional rendered secure by the legendry of tradition, a sacrosanct implied by the age-old and universal custom. Further than this, the doctor's office is a veritable tribunal wherein equity to self, to patient, to fellow practitioner and to fellow man, should be inviolably dispensed. For other purposes, the office evolves into decadence; as such it rebukes fidelity, it mocks sincerity, it scorns justice; it rips wide open the cloak of honor, it beguiles charity, it stultifies conscience. It is just possible the writer yields to the vagaries of sentiment in upholding the dignity and significance of the doctor's office. But, in the incessant march of our lives, do we ever

pause to think of the silent influences that sway us imperceptibly, unconsciously, and make and keep within us the motive that impels us upward and onward toward higher, nobler, truer, braver purposes and actions? If honor sanctifies, then the physician's unstinted and unquestioned devotion to the symbol of his profession is a servitude whose chains are so pure no acid test will tarnish, so strong no earthly force can break.

What is expected of the physician? Briefly, intellectual honesty, moral and professional decency. It must not be admitted that the medical practitioner of the present day can ply his trade in the shadows of mysticism or behind the veil of secrecy. Education has routed this type of artisan. To fulfill the requirement of intellectual honesty the physician must abandon secretiveness for candor, he must yield omniscience for the lowly toll of human limitations, he must forsake falsehood, innuendo and duplicity for truth and sincerity. As medicine is practiced today, intellectual honesty demands of the doctor a serious consideration of economics in behalf of the patient. Above all, values should be given for money received; work should be expedited with care; the patient's body and pocketbook should be emancipated from useless and continued application of drug and mechanical therapy that should be classed as mere piffle; the overhead expense of the physician should be reduced so that the practice of medicine will be beneficial to the welfare of the physician and patient alike. One might interject that the foregoing is a formidable formula for the transaction of medical practice, but the echo of this criticism reverberates with the message that only upon such tenets can the structure embodying the cherished ideals, the supreme hope and the final aspirations of the human race be found.

The co-partner of intellectual honesty, professional decency, must now pass in review. Perhaps many interpretations of this quality arise in your minds, but to the writer the crux of all such thoughts are embodied in that of a regard for a colleague's reputation. A doctor enjoys a dual reputation first, as a practitioner and second, as an ordinary man. To be attacked as a physician inferentially accuses him as



a man. For instance, to say an operation for appendicitis was unnecessary indicts the doctor as a money surgeon. Half truths are more deadly than mere calumny, as the former lends color to criticism while the latter can ultimately be exposed. Heresay rumors are synonymous with half truths. During the office confessional the doctor that unfurls his colleague's reputation as a target for battery and assault enters into moral debauchery, eschews professional amenities and unsheaths the sword of hypocrisy and disaster. As a disciple of professional indecency he causes an eclipse of every token of manhood and retreats to the hinterland rather than come face to face with the debacle caused by an ungovernable tongue. Many of us disagree with our colleagues and there are others we do not admire. Professional decency should restrain us from praising the unfit and ignorant doctor just as it demands us to extend to all men the fruits of the Golden Rule. The offices of the soothsayer are not required to inform us that the physician who gambles with his professional brother's reputation does so with sinister and ulterior motives.

Surely, no more appropriate opportunity to apply the wisdom of a pertinent adage to an existing evil, as just outlined, could arrive than upon the question of the motives prompting criticism,—“Good and evil, boon and bane, rose and thorn are always foils in pairs”. This quotation reminds us that the one given to criticism is not a public benefactor, and as such, he converts the cycle of his influence into a purgatory without the promise of a better state. It further brings to light that moderation, self-restraint is a straight and narrow path; the medium of safety hard to maintain, but the joy is worth the price.

A counter-thought of professional decency is jealousy. Perhaps the memory of man runneth not as to when this curse has not been visited upon the members of the medical profession. The dictionary definition of jealousy leads one to infer that it is based upon the fear of rivalry rather than upon the stimulus of competition. The well prepared doctor should have no jealousy as he will readily admit there are many practitioners capable of performing as high class and as efficient work as himself. In fact,

he welcomes such colleagues as a means to the end of promoting his own professional interests. It may be a radical statement, but the writer feels that where professional jealousy exists it is based upon a merciless hate, even though it may be a subconscious or indefinable feeling held by one physician toward another. A severe analysis of a physician's success might create a distortion of facts, bringing to the surface, on the part of the investigator, emotions of doubt and amazement as to what methods were employed to attain such a modicum of glory. This little jealousy insect buries its talons in its victims and instead of the sands of comradeship and amity flowing through the hour-glass of life, the baser passions receive an awakening from the poisons liberated by the “jealousy bug” and through the hour-glass runs the slime of unfriendliness and criticism. The sooner the physician admits he does not own a patient, that he can make mistakes and that he alone was not blessed with all the brains dispensed from above, just so soon will the malignancy of professional jealousy be lifted from the escutcheon of our profession.

Thus far, the burden of these remarks has been thrust upon the shoulders of the doctor. Let us now turn briefly to the patient, the remaining side of the triangle of the Doctor, His Office and the Patient.

A member of the profession could scarcely discuss this subject without an admixture of emotions, feeling that efforts in behalf of patients bring about the dual tribute of benediction and malediction, a resulting dual tribute, because, in the crucible of life there is an unbalanced proportion of an impure compound, creating an inferior product. In such an instance, faith, tainted with suspicion, truth besmeared with innuendo, justice shackled with the irons of prejudice, facts mixed with misrepresentation, ceaseless labors attacked by stinging criticism are the ingredients of the impure compound that patients too frequently place into the cup of life from which the doctor must quaff his share of happiness and blessings. It is recognized this is a severe indictment against the laity, but permit a citation of two rather universal customs that warrant the same.

Tale bearing, or just plain tattling is the first of these faults. Uninformed of things medical and armed with half truths and distorted versions of a specific case, the layman proceeds to spread reports—talking, stabbing reputation with a reckless abandon. Charity is forsaken, responsibility evaded and the limits of propriety and the territory for gossip know no bounds. On the other hand, the doctor in possession of facts, observes a code of gentility, of respect, of trust as a salute of loyalty to his patient. His could be an overwhelming victory against misrepresentations, but severe is his loss in the broadcast of unfavorable talk swallowed up as it is in the immensity of space. Peculiar is the practice of medicine as it reflects the characteristics of heart and mind of the physician. Then cruel is the act of tattling. It should cause the blush of shame, a riotous bewilderment that should remind the perpetrator that by such conduct he too reflects the characteristics of heart and mind. Knowledge is the very antithesis of ignorance and unless this wholesome attribute can lead one to the possession of facts and into a thorough investigation, the mantle of friendliness, of fair play and of brotherly love falls from the shoulders of man.

The second fault of the layman is the malpractice suit. This threat and actuality hovers over the head of the physician as the guillotine awaiting the rapier-like thrust of the executioner. Unwarranted and illogical is the vast majority of cases. Malpractice suits invoke a defensive mechanism on the part of the doctor in the discharge of his duty and in addition, creates a timidity in him, and the profession in general, that is caustically referred to as "medical ethics." In assuming the responsibility that is attendant upon any medical or surgical case, the physician places the table stakes of his career upon the roulette wheel of fortune. Motivated by a desire to serve mankind and clinging to the consciousness of the good that must be in his fellowman, the doctor answers the call of duty. He serves his best. If individual limitations operate to thwart the full fruition of desires and complete results, he, nevertheless has served his best. Often the queer twist of Nature checks him in his pursuit, but even so, he has served his best. What more can any man in any vocation

do? Why penalize the servant of your selection and to whom you voluntarily turn in search of health and life? The very fact that physicians must carry liability insurance is a travesty and is an ineffaceable scar upon the higher and finer attributes of the layman. Let us pause long enough for some one to mention any other profession, other than the dental, in which the members must seek such protection.

An unbiased analysis of the origin of malpractice suits reveals a startling fact. Seldom, if ever, does the man accustomed to assuming responsibilities appear as the plaintiff in such litigation. Seldom, if ever, does the man who is in the habit of discharging obligations appear in such a role. Then, the vast majority of malpractice suits is originated by the ignorant, irresponsible and ne'er do well specie of mankind—by men in quest of something for nothing—lacking in manhood to admit inferiority, lacking in stamina to play a square game. Life should record a better fate than this for any man. Posterity should receive a finer legacy. The humanities should awaken inspirations. The creed of universal sympathy and a common brotherhood should achieve its own reward.

In this discussion no brief is held for the charlatan—none for the doctor who misinterprets the significance and traditions of the medical profession.

In leaving with you these rambling thoughts upon an intriguing and inspirational theme, please understand that the task was not essayed because the writer was in a censorious or fault-finding mood. If the real facts were divulged, the writer cherishes the traditions of the medical profession and the exalted position of the Doctor. A flush of intense satisfaction and the warmth of friendliness and kindness should overwhelm the physician who hears the following tribute to the members of our profession from the pen of a master author: "I know of no worthier title than servant of this cross. To assume it voluntarily, and bear it worthily, with all its toils, self-denials and duties, is an honor greater than wealth or fame or glory's jeweled diadem. To see themselves deterred from the prizes earth most aspires to, while self-conscious of their talent to win, is of itself, an honor above and beyond aught else the world offers. Yet is even



this humility, the very circumstance and badge of honor, nor lacks it its own peculiar reward; for to him who is faithful, even in this life begins to manifest the outline of the crown."

## REMOVAL OF THE GALLBLADDER\*

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Gallbladder diseases are among the most prevalent and serious affections that menace human health, demanding a high degree of knowledge and skill on the part of the attending physician or surgeon. Generally speaking, disease of the gallbladder appears in middle or advance life, when decreased resistance on the part of the patient becomes a complicating factor.

As in all other cases, both surgical and medical, the first important step is diagnosis. All resources should be exhausted in making a thorough examination. The gallbladder and the intestinal tract should be x-rayed. All necessary laboratory examinations should be made. The history should not be disregarded.

While it is true that mention of the gallbladder to a patient immediately suggests stones, stones are nevertheless, but one circumstance in a chain of equally serious pathologic conditions. It is now generally conceded that stones are caused primarily by an infection which often may be traced to some former septicemia as the parent cause, typhoid as well as pneumonia often depositing the original bacteria. It is a question as to whether these bacteria disintegrate bile salts and cholesterin and thus lay the foundation for the formation of stones, or whether the infection permanently influences the lining membrane of the gallbladder, which may be in itself a constant source of such formation. On this point authorities differ. Lack of sufficient proof on either side does not alter the fact that a cholecystostomy does not prevent a return of the trouble in a large number of cases.

The ill-nourished, anemic patient, subject to chronic indigestion, is more often the victim of a chronic cholecystitis, per-

haps of a strawberry gallbladder, than is the well nourished person. Neglect of this condition may lead to the formation of gallstones, or congested ducts, with resulting septicemia,—perhaps a burst gallbladder. It is a condition that can not be ignored and surgical action should not be postponed.

While it is true that in many cases the surrounding tissues are friable from long infection and are easily lacerated, even so cholecystectomy is the operation of choice rather than cholecystostomy. It is as difficult to deal with one as the other, and in cholecystostomy the danger of drainage through the tissues is certainly augmented.

As heretofore mentioned, the fact that drainage of the gallbladder has been performed does not prohibit the return of the same trouble perhaps with complications. There are many cases of malignancy on record, resulting, perhaps, from continued irritation and traumatism.

It has been argued that stones often follow cholecystectomy. It is more reasonable to suppose that a stone was left in the duct. A proper examination of the ducts would in most cases eliminate this embarrassment.

Some men think that the gallbladder is as much a useless adjunct as the appendix; others think differently. There are many cases on record in which the post-operative cholecystectomy patient has enjoyed perfect health with no diminution of energy for months, sometimes for years.

Forty years have elapsed since the first cholecystectomy was performed, though it has been approved by most of the surgeons. In most cases it is the preferable operation. It is cleaner, less repulsive to the patient and to the attendants; there is less danger from complications; convalescence is much more rapid; the menace of adhesions is diminished and, certainly, the results are much more permanent.

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Carcinoma of the oral cavity ranks second in frequency to cancer of the uterus. Even though this form of cancer can be seen early and is easily accessible, it is one of the most fatal of all malignant diseases, with a mortality rate of 75 to 90 per cent. This great mortality rate is due, in large measure, to the failure to recognize the seriousness of precancerous lesions.—*Tyler, Nebraska M. J., May 1932.*

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\*Read at a recent meeting of the Morgan County Medical Society.

## THE SOLUTION OF MEDICOLEGAL PROBLEMS BY BLOOD GROUPING TESTS

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More than fifty thousand blood transfusions are done annually in the United States. Most practicing physicians have had one or more cases for whom this procedure has been prescribed and carried out. The donation of blood, in large cities at least, has become an occupation with its organization, hazards and standards of remuneration. The physician knows that careful tests are necessary before the blood of a donor can be given a recipient no matter whose method of transfusion is used. He knows, too, that of all the donors available only certain ones will be found satisfactory for use with a given patient. This widespread use of the blood of one human as a medicament for another has been the chief stimulus calling forth our present fairly extensive knowledge of the blood groups.

What most medical men are not so well aware of is the use to which this same knowledge concerning human blood inter-reactions can be put in the solution of sundry medicolegal situations. It is the purpose of this paper to discuss this point.

Several obscurities and misconceptions have hampered the use of blood grouping determinations in the solution of medicolegal tangles. One of these has been the belief that the blood group of an individual may change. A given patient is typed in one clinic as of one blood group and somewhat later is returned from another quarter as of a different blood group. Three factors, at least, are responsible for this misconception. In the first place the technique of blood typing is subject to error despite its seeming simplicity. If the test serums used are not potent and checked frequently or if the technician is not most careful it is possible for a wrong reaction to be obtained. This is particularly liable to occur in dealing with the blood of certain individuals in whom the isohemagglutinin in the red blood cells or the isohemagglutinin in the serum is low. Careful and controlled tests by experts have shown

that the blood group of an individual, once it is formed, is not altered throughout life by diet, disease, medication, hemorrhage, inoculation, or other factor.

Secondly, though the blood group of an individual is stable, it has nevertheless developed in the course of his growth. If a very young infant is typed it is possible to obtain a result different from that obtained somewhat later in the life of the same individual. The blood group which one has is determined by the blood groups of his parents but this characteristic is one of several which have not completely matured at birth. As a rule the young infant's blood cells possess their full complement of isohemagglutinin and will type true to the group he will have as an adult. Frequently, however, the infant's blood serum will be found lacking in its isohemagglutinin content. It is only a matter of a few weeks until the blood group features are all fully mature. Inasmuch as the commonest method of typing blood consists in the use of suspensions of the red blood cells of the person to be typed and known serums from the laboratory, it will be seen that even young children may usually be typed for medicolegal determinations. The most careful work would, however, demand a retyping after the child was several weeks old, provided the first tests were made just after birth.

A third factor of confusion as regards the blood groups and their stability is the question of terminology. Americans are apt to make use of the Moss nomenclature for Moss is an American worker and his work published from a leading eastern medical center is naturally more familiar to us than foreign publications. It was realized some years ago, however, that the classification of Jansky had priority over that of Moss and many medical scientists and some institutions have used the Jansky names for the blood groups. Considerable confusion has resulted. For instance, the so-called, but dangerous "universal donor" is group IV of Moss and group I of Jansky. In the endeavor to clear up the confusion a third nomenclature was introduced making use of the letters O, A, B and AB to designate the four blood groups instead of numbers as in the systems of Moss and of Jansky. This system should be followed for

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it gets away from the Moss-Jansky confusion and its groups are named for the isohemagglutinogens in the red blood cells. It is possible, however, that in the minds of many the result has only been greater confusion. It is true, as shown by Kennedy, that hospital practice in this country is by no means uniform in its blood-grouping terminology. Figure I has been prepared to make clear the relationship of the different terminologies, to give the agglutinin and agglutinin content of the group, and to show the result of mixing bloods of different groups. In this paper the terminology O, A, B, and AB is used.

Figure 1

Blood Group Terminologies, Compositions and Interactions

				Isohemagglutinogens in Red Blood Cells			
				O	A	B	AB
International Terminology				I	II	III	IV
Jansky Terminology				IV	II	III	I
Moss Terminology				O	A	B	AB
Isohemagglutinins in the Blood Serum	O	I	IV	ab	O-ab group B	A-ab	ab-B
	A	II	II	b	O-b	A-b group A	B-b
	B	III	III	a	O-a	A-a	B-a group B
	AB	IV	I	o	O-o	A-o	B-o
				AB-o group AB			

The four squares through which the diagonal is drawn represent the four blood groups with their formulae O-ab, A-b, B-a, and AB-o. (Capitals denote isohemagglutinogens in the cells, small letters show serum isohemagglutinins.) The other twelve squares represent the remaining possible combinations of serums and cells. Of these, five are theoretically compatible and seven incompatible. As a matter of fact, however, no two bloods are wholly compatible unless they are of the same group for not only must donor's cells and recipient's serum be considered but donor's serum and recipient's cells.

Another misconception has to do with the number of the blood groups. At one time the trend of research was toward the conclusion that there were more than four of these groups. At present it is clear that there are blood group factors which are apart from the recognized four types

O, A, B, and AB, as M and P of Landsteiner, or which may be thought of as subgroups, as A' and A'B of Thomsen, but it may be stated that for all practical purposes the four blood groups as commonly recognized are fundamental and all-inclusive. Typings to determine fitness for blood donation, for racial study or for medicolegal purposes may properly disregard these groups M and P or 'A and A'B, which are chiefly of academic interest and to be determined by procedures more elaborate than ordinary blood typing tests. The position taken in a series of papers published about eight and nine years ago pointing to perhaps twenty-seven groups has not been substantiated. The blood group feature of an individual is a developed character determined by his heredity and may, like any other such factor, be subject to developmental deficiency or anomaly. The rare occurrence of an atypical blood does not warrant the assumption that such is a common happening for which definite rules and terms should be laid down to further complicate a terminology and technic already confused and subject to error.

The blood groups occur as fixed biochemical entities which have now been studied statistically for nearly a quarter of a century. In 1908 Epstein and Ottenberg made the first suggestion that the groups might be subject to Mendelian inheritance. Shortly after this, workers began to collect data on families and it was early established that a specific isohemagglutinin could not appear in a child unless it was present in at least one of the parents. In carrying forward the work of establishing beyond doubt the hereditary nature of the blood groups, it has been necessary to postulate the mechanism of the inheritance.

Here again confusion has crept in, delaying the widespread use of blood grouping determinations to solve medicolegal questions. Before we have agreed upon the mechanism of the inheritance of the blood groups and fairly demonstrated the validity of our hypothesis it is hardly likely that much use can be made of blood typings in such connections.

It may now fairly be stated that the Bernstein hypothesis of triple allelomorphs has been satisfactorily established as an ex-

planation of blood group heredity. By this hypothesis there are two dominant factors: A and B and a recessive R, or O, which may or may not be carried by the dominants A and B, which themselves may exist alone or together. Thus we have the groups O, A, B, and AB and it can be seen that the use of letters to designate the groups brings the genetic and the serologic terminology into accord. By this hypothesis the genetic formulae of the groups, which only theoretically concern us here, are OO, AA or OA, BB or OB, and AB.

For many years the theory of two independent pairs of factors brought forward by von Dungern and Hirsfeld, was accepted. By this theory the factors A and B exist independently and dominant to not-A or a and to not-B or b. For practical purposes this theory differs from the triple allelomorph theory only in that unions where one or both parents are of group AB may result in children of any one of the four groups. This cannot be the case by the triple allelomorph theory and we have here an important testing point of the two theories. In recent years thousands of families have been typed and from this data and from mathematical considerations too elaborate to reproduce here the conclusion has been reached that the triple allelomorph explanation first put forth by Bernstein is the most perfect explanation of blood group heredity. It will perhaps serve a useful purpose to tabulate some of the information concerning the groups which is available as it is explained by both theories, but it should be noted that we use the triple allelomorph hypothesis in our discussion. See Tables 1, 2 and 3.

In the light of our previous discussion we may now illustrate the application of blood group methods to medicolegal situations. These cases are hypothetical ones, but the reader will note in some of them, a similarity to actual court cases which have attracted wide attention in the past.

CASE 1.—Mr. A. wishes to disinherit a child thought by all to be his own. He accuses his wife of having been unfaithful and implicates a Mr. B., whom he alleges is the real father of the child.

*Blood typings.*—Mr. A      O  
                   Mrs. A      A  
                   Child     AB  
                   Mr. B      B

Table 1  
Genetic Formulae of the Blood Groups

Two Independent Pairs of Factors				Triple Allelomorphs			
O	A	B	AB	O	A	B	AB
aabb	AAbb Aabb	aaBB aaBb	AABB AaBB AABb AaBb	OO	AA AO	BB BO	AB

Table 2  
Children Possible to Different Parent Combinations

Two Independent Pairs of Factors			Triple Allelomorphs		
Parents	Possible Children	Children Not Possible	Parents	Possible Children	Children Not Possible
OxO	O	A,B,AB	OxO	O	A,B,AB
OxA	O,A	B,AB	OxA	O,A	B,AB
OxB	O,B	A,AB	OxB	O,B	A,AB
OxAB	O,A,B,AB		OxAB	A,B	O,AB
AxA	O,A	B,AB	AxA	O,A	B,AB
AxB	O,A,B,AB		AxB	O,A,B,AB	
AxAB	O,A,B,AB		AxAB	A,B,AB	O
BxB	O,B	A,AB	BxB	O,B	A,AB
BxAB	O,A,B,AB		BxAB	A,B,AB	O
ABxAB	O,A,B,AB		ABxAB	A,B,AB	O

Table 3  
Illustrating Determination of Children from Given Union—O and AB

Two Independent Pairs of Factors			Triple Allelomorphs	
Parent			Parent	
Germ cells	ab	ab	Germ cells	O
AB	AaBb	AaBb	A	OA
aB	aaBb	aaBb		
Ab	Aabb	Aabb	B	OB
ab	aabb	aabb		

In this case Mr. and Mrs. A. are not the parents of the child. If we assume that Mrs. A. is the mother, Mr. A. could not be the father. The father is from either group B or group AB. Mr. B could be the father, but it is to be emphasized that this test does not identify him as the father. It does show us that Mr. A. is not the father, and that some other man is, and in this connection Mr. B. is eligible for consideration.

CASE 2.—Mrs. C and Mrs. D. enter a maternity hospital on the same day and on the following day each is delivered of a male child. A day later Mrs. C's baby dies. Mrs. C. cannot be made to believe that it is her child which has died and claims that the hospital has confused the babies. Inasmuch as she is a matron of unusual force of character and Mrs. D. is quite the contrary her opinion prevails, the more so since Miss Z. the nurse, has been found careless on previous occasions. Ten days later when the women are discharged Mrs. C. takes the surviving baby. After some weeks of indecision Mrs. D. brings suit to recover the baby as her own.



*Blood typings.*—Mrs. C     A  
                   Mr. C     B  
                   Mrs. D   AB  
                   Mr. D     O  
                   Baby     B

Here the blood types assigned to the character in this drama will not contribute to a solution of the case, for a baby of type B could belong to either couple. Conditions were quite different in the 1930 Bamberger-Watkins case in Chicago in which the babies were interchanged. In this case the blood groupings were obtained and when properly interpreted by the triple allelomorph theory placed the confused babies correctly.

CASE 3.—Governor E. and friends were traveling on a fast train which was wrecked with many fatalities, including the governor. His car burned and it was only possible to recover the nude and charred bodies of its passengers. When Mrs. E. arrived at the morgue she could not decide which of two corpses was that of her husband for he had no distinctive dentistry, jewelry or other mark of identification which survived the fire.

*Blood typings.*—Father of E. A  
                   Mother of E. O  
                   Mrs. E.    B  
                   E. Jr.     AB  
                   Corpse 1   A (Pericardial  
   fluid)  
                   Corpse 2   O (Pericardial  
   fluid)

Either corpse as far as the blood tests go could be the son of the aged father and mother of Governor E., but of the two, only corpse 1 could, with Mrs. E. as a wife, have a child of group AB. Pericardial fluid is the best source of material for the blood grouping tests when a dead body is concerned. It is typed by the use of suspensions of known red blood cells of groups A and B.

CASE 4.—Mr. and Mrs. F. were the middle-aged and wealthy parents of an only child. At the age of six this child was kidnaped while he was out playing and despite all the efforts of his parents he could not be found. Fifteen years later a young man presented himself to Mr. and Mrs. F. and claimed that he was their long lost son. There was no birthmark, article of clothing or jewelry, or any striking family resemblance to further his claim and he was not able to give an entirely consistent story of his past. The old couple were suspicious and demanded some conclusive proof before admitting the claims of the young man.

*Blood typings.*—Mr. F.     O  
                   Mrs. F.    B  
                   Claimant A

The typings as indicated above prove that the young man is an imposter. To be the son of such parents he would have to belong to group O or to group B.

CASE 5.—Miss G., a simple country girl fell in love with Mr. H., who was rooming with her family during a summer vacation. Somewhat later it was discovered that she was pregnant and at term she was delivered of a boy baby. She named Mr. H. as the father of her child. Mr. H. admitted relations with Miss G., but maintained that she was a girl of promiscuous morals and had also received attentions from other men during the time he was stopping with the family. He denied paternity.

*Blood typings.*—Miss G.   O  
                   Mr. H     B  
                   The baby A

This result shows that Mr. H. is not the father of the baby.

CASE 6.—Mr. M. is wanted in New York for the misappropriation of a large sum of money. The San Francisco police arrest a man known as Mr. N. and allege that he is Mr. M. Mr. N. protests his innocence but as he was living in New York at the time the money was embezzled and looks very like Mr. M's pictures, the California police insist on sending him to New York. Mr. M. has had no previous police experience and has never been finger printed. Mr. N. is sure that he can prove his innocence but dreads the notoriety and loss of time and money attendant upon a forced trip to New York. Mrs. M. and four children have been located by the New York police. Mr. N. asks that their blood and his be tested.

*Blood typings.*—Mrs. M.   A  
                   Child 1   O  
                   Child 2   A  
                   Child 3   O  
                   Child 4   O  
                   Mr. N     AB

In such a case Mr. N. could not be detained for he and Mrs. M. could not be the father and mother of the children in question. Their father will probably be O or A, although he might be of group B. He could not be of group AB.

Tests of this sort are coming into use in many legal situations in some parts of the world. Properly conducted and interpreted they can sometimes settle a tangle in which parentage is a factor. Certain courts have ruled that a person may be compelled to participate in blood typing determinations in order to have at hand the evidence the tests can give.

When the tests are understood people are usually willing to participate in them, especially when innocent. Blood grouping tests cannot convict even a guilty person except under unusual circumstances but they may be the means of establishing be-

yond doubt the innocence of an involved person. Their evidence is chiefly negative rather than positive.

It must be admitted, however, that decisive proof of innocence is not always forthcoming. Thus Hooker and Boyd recently compiled a table showing just what chance an innocent man would have of proving non-paternity by blood-grouping tests. A modification of their data follows:

Blood group of the accused man	His chance, being innocent, of proving non-paternity	% distribution of groups among 20,000 Americans (from Snyder)
O	1:5	45.0
A	1:17	41.0
B	1:7	10.0
AB	1:2	4.0
Unknown	1:7	

Thus an innocent man stands a chance to prove non-paternity by blood tests which varies from one to two to one to seventeen. On the average, in advance of knowledge of his blood group, his chance of absolutely exonerating himself is one to seven. Should it be found that his blood group is that of the father of the child his case should not be considered unduly prejudiced unless all other possible fathers are also tested and all eliminated save he. Of course if the father is shown to belong to the rare group AB and he happens to belong to that group a certain shadow of suspicion falls upon him. Should the tests show that his blood group is an entirely impossible one for paternity in the particular case in point he has of course established a satisfactory alibi. Blood typing tests, then, are of value on the whole in establishing negative evidence. Such negative evidence may under certain circumstances be so valuable as to amount to a positive contribution to the case. Blood typing tests can only single out a person and say, "Thou art the man", when attendant circumstances are unusually favorable.

#### REFERENCES

For the sake of brevity the usual bibliography is omitted. Blood Grouping in Relation to Clinical and Legal Medicine, by Laurence H. Snyder of North Carolina State College, published in 1929 by Williams and Wilkins at Baltimore may be referred to by those who seek further information or a rather complete bibliography of literature on blood typing up to 1929.

**The Koch Anniversary:** The fiftieth anniversary of the announcement of the discovery of the tubercle bacillus by Robert Koch calls attention anew to the great German bacteriologist and to the diseases whose causative microbes he was the first to detect.

Starting as an obscure country doctor with meager resources, his demonstration of the life history of the bacillus of anthrax came in 1876. So ingenious, thorough and conclusive was this investigation that it was hailed at once as one of the greatest ever made in the field of bacteriology. At the age of 37 Koch was appointed to the Imperial Health Department. Thereafter he wanted neither capable assistants nor suitable laboratory equipment for the prosecution of his researches.

From his first discovery to the time of his death in 1910, Koch's career was productive not only of original discoveries but of methods of research which have led to important discoveries by others. Nobody in his field has ever made so many substantial contributions as this quiet, dignified, industrious, ingenious and severely logical German. Many of the technical methods which he was the first to employ are among the most common procedures in every bacteriological laboratory at the present time. The conditions which he declared must be satisfied before a micro-organism should be recognized as the cause of a disease are now universally accepted as necessary and sufficient.

Koch's discovery of the bacillus of tuberculosis was an interesting example of the fact that the identification of the causative agent may not lead to the eradication of a disease nor even to a frequently effective means of prevention or cure. Tuberculin, originally announced as a remedy, is now regarded only as a means of diagnosis. Preventive inoculation by the Calmette method, although it has now been applied to over a million children, has not had the enthusiastic approval of the medical profession. No other method of preventing tuberculosis or treating it by means of a biological product has come into general use. Tuberculosis has resisted such efforts as have robbed diphtheria, tetanus and typhoid of much of their terror.

The fifty years since the tubercle bacillus was discovered have seen more scientific study and unselfish effort given to the eradication of this disease than have been devoted to the control of any other malady. The warfare has involved efforts in many directions. The resources of private philanthropy and of cities, states and nations have been devoted generously to the cause. There has resulted a great deal of scientific information. The death-rate has fallen materially; but it is impossible to say to what extent this has been due to any particular method of attack.

Few infections are so widely distributed, and the fact that only a certain proportion of the persons who harbor the germs ever give evidence of the disease is one of the puzzles connected with it. That practically every animal is susceptible to tuberculosis; that there are many forms of it; that almost any part of the body may be affected; that it is not inherited; that, unlike many other diseases, it is not self-limiting, and that its progress may often be arrested in its early stages, through good food and rest, are among the helpful facts which have been well established.—*The Newark Evening News*, March 24, 1932.



# THE JOURNAL

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## THE MODE OF TRANSMISSION OF BRILL'S DISEASE

It is one of the fundamental concepts of epidemiology that modes of transmission of specific infectious disease do not change; once the channel of spread is known, it can be predicted with certainty for each occurrence. When a case of typhoid fever occurs, the origin is always the discharges of another active case or a healthy carrier with whom the patient has come in contact. The transmission of rabies is always by means of the saliva of the rabid animal. In pneumonia and poliomyelitis, the infection is carried, quite directly, by the respiratory secretions, from the infected person to the susceptible victim. In all of these diseases and many others similar to them, the specific agent requires no special channel or vector. The only requisite is that the journey from the infected person to the susceptible one be not too devious, nor so long delayed, that the infectious material die in transit.

There is another great group of diseases which require, for their propagation, the intermediation of a third party. This is the important class of insect-borne diseases. Outstanding examples are malaria, yellow fever, typhus, Rocky Mountain spotted fever, and bubonic plague. One of their chief characteristics is that the insect vector is highly specific, even closely related species being insusceptible to the parasite. The insect vector is often a true biologic host in that it furnishes the environment for a

necessary stage in the life cycle of the parasite, and until this development has been completed the insect does not become infectious.

Insects, however, often act as mechanical vectors; i. e., no development of the parasite occurs, the insect merely serving as a vehicle for the transmission of the virus. This is probably the case in bubonic plague, the flea showing no pathological reaction to the presence of the bacillus. Plague, furthermore, is an example of a disease primarily of animals, man being infected only when the animal (rat) population becomes excessively large. A discussion of the interesting relation to man of epizootic diseases cannot be carried further here as it would take us too far afield. The point is that, even tho a disease may exist naturally in more than one species of animal, only one insect vector is involved in its transmission.

A notable exception to this rule has recently been discovered. The epidemiology of typhus fever was carefully and thoroly studied during the World War. That its relationship to close crowding under filthy conditions has long been known is implied in the names "jail fever" and "ship fever". Its appearance and spread under these circumstances is now known to be due to the ubiquity of the body louse. Delousing stations established in infected areas were effective in preventing the spread of the disease. It was, therefore, concluded that typhus was a disease of man and its mode of transmission was exclusively by means of the body louse. "Without lice, no typhus". Both of these conclusions must now be modified in the face of new facts.

When the epidemiological observations by Maxcy<sup>1</sup> made it clear that mild typhus or Brill's disease exists in endemic form in the southeastern United States, it was difficult to explain its occurrence, because the louse was conspicuous by its absence. Maxcy observed, however, that many of the persons who had the disease, particularly in Montgomery and Savannah, worked in wholesale houses and other rat-infested localities. He, therefore, ventured the surmise that this mild form of typhus was transmitted by some parasite of the rat. This theory was proved experimentally by

(1) Maxcy, K. F.: Pub. Health, Rep. 44: 1735, July 19, 1929.

Dyer and his associates<sup>2</sup>, at the National Institute of Health, who showed that the rat flea can transmit the virus from guinea pig to guinea pig and from monkey to monkey. Furthermore, they extended the experimental proof by the demonstration of the virus in fleas caught on wild rats<sup>3</sup>. Zinsser and Castaneda<sup>4</sup> completed the chain of evidence by demonstrating the virus in the brains of rats caught in endemic centers. Mooser and Castaneda<sup>5</sup> have recently shown that the *Rickettsiae* multiply enormously in the flea, but that, contrary to the rapidly fatal infection of the louse, the flea soon establishes an equilibrium, remaining infectious for long periods of time.

There have thus been established two modes of transmission for typhus fever. The virus may be conveyed from man to louse to man, as an explosive epidemic, or from rat to flea to rat or man,—the mild endemic form. It is not clear whether the flea or the louse is the original host of the virus; in favor of the former is the evidence that it is a more perfect host than the louse which succumbs so quickly that there is less opportunity for transmission. The rat-flea-man cycle, furthermore, can never cause epidemic conditions for several reasons; the flea does not bite man, as a rule, except in the absence of its natural host; nor is the virus so abundant in the feces of the flea as in the louse.

Typhus, therefore, may be considered primarily a disease of rats. Whether it is only incidentally a human disease, as with plague, our new knowledge does not permit us to say, but it is, nevertheless, certain that eradication of the rat would cause the disappearance of the endemic form as it exists in the United States.

It is interesting to conjecture whether other diseases, as they approach extinction through modern sanitary efforts, will discover new means of propagation and thus gain a reprieve from complete extermination. The history of yellow fever shows

how difficult, in fact well-nigh impossible, it is to completely eradicate any disease.

#### PHYSICAL THERAPY IN THE TREATMENT OF ACUTE FRACTURES

Too often unwarranted claims for the use of physical therapy in the treatment of acute fractures are made, thereby causing damage in some instances and in others nothing at all being accomplished. The following facts must be borne in mind in any effort to evaluate this agency in the treatment of acute fractures:

(a) That certain manufacturers and overzealous salesmen of physical therapy devices are likely to be more interested in the clinching of a sale than in the individual patient.

(b) That untrained laymen may be employed in using physical therapy without proper supervision.

(c) That, in some instances, so-called "doctors", without M. D. degrees, and even unscrupulous members of the medical profession have to be considered.

Physical therapy consists not only of massage, hot baths, contrast baths, active and passive motions and varied supervised exercises, but also of electrotherapy devices such as diathermy, ultraviolet, actinic, radiant light, zoalite, galvanism, faradism and other electrical devices. All physical therapy departments treating acute fractures and other traumatic cases should be under the direct supervision of a trained physician, who has made a study of electro-physiotherapy and who fully knows the pathology of all acute fractures. Such an one must never become an extreme enthusiast, but must know the limitations and possibilities of such agencies.

The proper administration of electro-physiotherapy in the treatment of fractures is impossible without the scientific knowledge of the mechanics of the machine used, the anatomy and function of the parts of the body involved, as well as the effects of electro-physiotherapy on the part of the body to be treated. With careful supervision, there is a definite place and advantage for the use of electro-physiotherapy in treating acute fractures or traumatic cases in their early convalescence which generally brings about a lessened period of disability. The majority of frac-

(2) Rumreich, A., Dyer, R. E., and Badger, L. F.: *Pub. Health Rep.* 46, 470, Feb. 27, 1931.

(3) Dyer, R. E., Rumreich, A., and Badger, L. F.: *Pub. Health Rep.* 46, 334, Feb. 13, 1931.

(4) Mooser, H., Castaneda, M. R. and Zinsser, H.: *Jour. A. M. A.* 97, 231, July 25, 1931.

(5) Mooser, H. and Castaneda, M. R.: *Jour. Exp. Med.* 1932, (Feb) 55, 307.



tures, however, cannot be placed under the observation of a trained physiotherapist. These cases should be treated only by hot baths, heat, active motion and guarded massage, just as soon as sufficient union has taken place to warrant the removal of the fixation splints from the injured part. All such treatments should be carried out only under the supervision of a doctor of medicine, who is familiar with the pathology present.

Fixation should not be removed in acute fractures until sufficient union is present. One should not expect electro-physiotherapy to do what fixation in a cast or splint or traction only can do. With properly applied casts or with certain forms of fixation in splints or frames or traction in acute fractures, electro-physiotherapy treatments can be given and should be recommended in certain selected cases.

Prolonged fixation in any acute fracture is not recommended, especially in the joint fractures. Electro-physiotherapy in this type of fracture, especially active motion, certain exercises, and heat with guarded massage as early as practical are indicated.

Treatment directed to the soft parts in acute fractures is most important. By properly applied electro-physiotherapy to all soft structures in these fractures, an earlier return of function is accomplished and with a lessened period of disability.

Each case of fracture, with its concomitant soft parts, nerves, blood vessels, and joint injuries, is a problem unto itself. There should always be the closest cooperation between the physician in charge of the fracture and the physiotherapist. An understanding of the history, diagnosis, pathology, and all previous treatment given by the referring physician, with a definite outline of the electro-physiotherapy treatment planned, should be had by all concerned.

The successful application of physical remedies to fractures depends largely on the experience and common sense of the physician specializing in physiotherapy, coupled with his willingness to cooperate with the physician treating the fracture.

The patient must not be taught to depend entirely on the electro-physiotherapy treatment. It must be impressed on the patient that such treatment is but an adjunct to

bring about a cure, in which he must cooperate. Not infrequently the patient may develop a psychosis and eventually become a malingerer. Active motions and efforts carried out by the patient are beneficial and should be accomplished in every case. Continued application of electro-physiotherapy is generally not indicated for continued pain when good union, position and function are present. The suspected malingerer should not be allowed to continue electro-physiotherapy over a long period when all other physical signs are negative except pain. Too often electro-physiotherapy in this type of case is used *by* the patient rather than *for* the patient.

H. E. C.  
O. R. T.

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#### THE ASSEMBLY OF THE SOUTHEASTERN SURGICAL CONGRESS

The Third Annual Assembly of The Southeastern Surgical Congress held in Birmingham, March 6-8, proved to be one of the most instructive and valuable surgical sessions ever held in the South. Despite the financial depression, there were many visitors from a distance. Southern speakers, liberally represented on the program, maintained Southern traditions of dignity and excellence.

At the business meeting, Atlanta was chosen as the scene of the 1933 Assembly. The following officers were selected:

President, Dr. Frank K. Boland, Atlanta; President-Elect, Dr. Willis C. Campbell, Memphis; Vice-President, Dr. Gilbert F. Douglas, Birmingham; Director-General, Dr. B. T. Beasley, Atlanta.

The greater part of the business meeting, however, was devoted to a discussion of some form of publication for the Congress. The obligation to itself and to its distinguished speakers to publish the papers read before the Assemblies made it incumbent upon the Congress to have some form of publication. It was decided, moreover, that a distinctly Southern surgical journal would add to the prestige of Southern surgery and inspire the younger men to write. A journal was therefore considered preferable to a volume of transactions. The question was referred to the Executive Committee with power to act.

## DEPARTMENT OF PUBLIC HEALTH

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## THE PROBLEM OF OVERSUPPLY IN THE NURSING PROFESSION

The problem of oversupply in the nursing profession is real; it is one which should receive sober and serious consideration at the hands not only of the members of this profession, but of the medical profession, of training schools and all other interested groups. The following news item, emanating from the American Nurses Association, should claim the attention of all doctors:

Training schools must curtail the steady production of more nurses or the morale of the nursing profession will break down completely. This is the opinion of the Committee on the Grading of Nursing Schools, following an analysis of early returns of the 1930 census on workers.

How serious the oversupply of graduate nurses has become is revealed by the Grading Committee after tabulating figures for eighteen states and the District of Columbia. For this group, since the 1920 census, the total population has increased 7 per cent, while the total number of trained nurses has increased 78 per cent.

Although there are still areas of the country and groups of patients not properly nursed, owing to poor distribution and lack of special training, the figures for the forty-two cities studied show that the average nurse has no more than 149 days of employment in any given year, according to the present sickness rate. In Bangor, Maine, she has not more than 77 days of work, and in Ottumwa, Iowa, where employment conditions are best among the cities studied, she can work not more than 201 days in the year. Rates for the other cities range between these two.

States as a whole are somewhat less oversupplied with nurses, although in New Hampshire the nurse can expect no more than 190 days of work in the year, and in Maine, Vermont, Iowa, North Dakota, South Dakota, Kansas, Delaware, Montana, Wyoming, Arizona, Nevada, Idaho and the District of Columbia there is not nearly enough nursing to be divided between the trained and untrained nurses competing for patients.

Untrained nurses are not on the increase, census figures show, but trained nurses are being turned out to terrific competition by the thousands each year. In Maine, for example, there was in 1900 one trained nurse for every 5,068 persons; in 1910, there was one for every 910; in 1920, one for every 579, and in 1930 one for every 349.

"If nursing is to avoid disaster," says Dr. May Ayres Burgess in presenting these figures in the

March number of the *American Journal of Nursing*, "the steady production of more students, who become graduates, must cease. It must cease not only in the small schools, but in most of the large schools as well. Graduate nurses must be employed. If they are unemployable, they must be reeducated. The schools of nursing have produced them. They are members of the profession. Unless their morale is to break down completely, they must either be eliminated or utilized.

"This is a year of national economic distress. Hospitals are short of funds. How, then, can hospitals take care of their patients with reduced numbers of student nurses, with increased numbers of graduate nurses, and without increasing the annual budget? Let us not assume that there is no solution for this problem. Nurses who are intimately familiar with hospital administration may be able to discover new economies, new methods of organization, which will make reductions in the number of student nurses possible. Unless some solution can be found, which it is within the practical means of the hospital to adopt, nursing will continue to grow in numbers and in distress."

What the census figures will show for densely populated states, such as Massachusetts, New York, Pennsylvania, Illinois and California, no one yet knows, but nursing leaders feel grave concern. Census reports for these and other states are being analyzed by the Grading Committee as rapidly as they become available.

## BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

## HOW MUCH IS YOUR BABY WORTH?

Contributed by Mrs. Fred C. Meyer,  
Assistant Director

How much is a child worth at birth? Not from the standpoint of sentiment, but economically speaking, how valuable is the life of an infant?

Dr. Louis I. Dublin, in his recent book, entitled, "Health and Wealth," has computed the value of a child at birth. Surely human life is not dearer to one family than another, but Dr. Dublin's figures apply to the children of families having annual incomes of \$2,500, this being considered a fair average.

The child born into such a family is valued at \$9,333. In other words this is the sum of money which it is necessary to spend on the child until he becomes self-supporting. Since the majority of adults produce



more than they consume the rearing of children may be regarded as an investment to the community if not to the immediate family. To prove this point, Dr. Dublin has further calculated the future earnings of a man at eighteen years of age. Coming from a family of this same financial status, the man at eighteen may expect his future earnings to exceed \$41,000 with future expenditures of \$13,000.

It has been said that there can be no more sensitive index to civilization and progress of a nation than its infant mortality rate. In this respect the United States compares favorably with other countries and Alabama is an average state. Even in Alabama, where conditions are favorable to rearing children the fact remains that each year the state's human wealth is jeopardized in the loss of 7.5 per cent of infant lives. To be exact, in 1928 of every 1,000 babies born alive 74 did not reach their first birthday. Economically speaking, this means an annual loss to the state of nearly a half million dollars.

Conservation of infant life is one phase of work undertaken by Alabama's health service.

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## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### THE AGE INCIDENCE OF COMMUNICABLE DISEASES

A study of the cases of communicable diseases reported to the State Board of Health during 1931 reveals some interesting figures. Certain diseases have long been known as childrens' diseases but there is considerable variation in the ages at which each is most prevalent. For example, with diphtheria the ages showing the greatest number of cases were: (a) three years; (b) four years; (c) two years; and of the total number of cases reported 53% were five years old or under.

The pre-school group was also responsible for many of the cases of whooping cough, measles and scarlet fever. Pneumonia had its greatest incidence in the 0-4 group, closely followed by the younger school child of 5-9. Typhoid fever had its peak in the 10-14 group and decreased rapidly after reaching 25. Tuberculosis was

relatively rare amongst children but from 15 on became much more common with the age period 20-39 having most of the cases and the last five years of the group showing the peak incidence.

Pellagra and, of course, the venereal diseases were the diseases showing their greatest incidence among adults. The age group of 20-24 showed the peak for both syphilis and gonorrhea. Influenza and malaria apparently had no age choice, as they were equally distributed through all ages. Smallpox also had no favorite age group, depending solely on the status of vaccination.

Control measures naturally should be directed to the groups needing it and this analysis merely shows again the necessity of giving diphtheria toxoid to the infant, typhoid vaccine to the young child, and smallpox vaccine to any and all ages.

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## BUREAU OF INSPECTION

C. A. Abele, Director

### MILK SANITATION RATINGS

Between February 4 and 17 Dr. Clarence E. Smith, Milk Specialist of the Office of Milk Investigations of the U. S. Public Health Service, made surveys of the municipal milk supplies of nine communities in this State. The Office of Milk Investigations advocates the regular annual determinations of the milk sanitation status of all communities in which the Standard Milk Ordinance is in force, and collects, tabulates, and analyses these data. The purpose of Dr. Smith's visit was to make several sample surveys with each district dairy inspector, to assure uniformity of rating figures in this and other states.

Before leaving the State Dr. Smith expressed his confidence in the ability of the several district inspectors to make accurate and thorough inspections.

The method of making the survey in any given city is to inspect at least 50 retail raw milk dairies, at least 50 farms delivering milk to pasteurization plants, and at least 50 pasteurization plants unless the total number in any one of these groups is less than fifty, in which case the entire number is inspected. Such a number of inspections will give a representative average cross section of the city milk supply.

In making the inspections the survey of-ficers use as a criterion the Grade "A" Raw Milk and the Grade "A" Pasteurized Milk items of sanitation as specified by the Standard Milk Control Code.

In computing the percentages of compliance for the various items of sanitation with respect to the municipal milk supply as a whole, the number of gallons sold by each distributor are entered upon each of the column headings representing items of sanitation which have been found violated in whole or in part by that distributor. The addition of any of these various columns gives the total number of gallons of milk per day distributed from establishments which do not fully satisfy the items of sanitation in question. The subtraction of these figures from the total number of gallons distributed, and the division of the remainder by the total number of gallons distributed, thus yields a series of percentages of compliance, one for each of the various items of sanitation.

It will be obvious that all of these items of sanitation are not equally important. Therefore a system of weights has been assigned to the various items of sanitation in an attempt to take account of this fact. Each percentage of compliance is multiplied by the weight assigned to the item of sanitation it represents, and the addition of the resultant "credits" for all of the items of sanitation thus finally gives the rating figure. Individual rating figures are computed for the retail raw milk, the raw milk delivered to pasteurization plants, and the pasteurization plants proper. The mean of the last two is then computed and represents the "pasteurized milk rating". Thus we finally obtain two ratings, one for the raw milk and another for the pasteurized milk. These two ratings, together with the percentage of milk which is pasteurized will give a complete estimate of the milk sanitation compliance status of any given city, state, or even larger area.

The ratings for any given city indicate the extent to which that city is enforcing the milk sanitation requirements for Grade "A" Raw and Grade "A" Pasteurized Milk as contained in the Standard Milk Control Code. A low rating does not always indicate that the milk supplies are unsafe. This will be evident from the fact that a supply

could violate every item of sanitation except the actual pasteurization process and still be "safe". It would not be desirable and should receive a low rating, but it would be safe. However, a low rating will usually mean that a sufficient number of important items of sanitation have been violated to render the supply potentially dangerous.

On the other hand, a rating of above 95% will in the case of pasteurized milk, usually indicate that the supply in question has been protected with all, or nearly all, practicable safeguards. In the case of raw milk, a rating above 95% will mean that the supply has been protected with all, or nearly all, practicable safeguards except pasteurization.

In connection with the foregoing discussion, it is gratifying to learn that according to U. S. Public Health Service dairy inspection standards the milk sanitation status of every one of the nine municipal milk supplies surveyed rated 91.0 or above. This speaks volumes for the efficiency of the milk control being maintained throughout the State, for these surveys are but samples of conditions elsewhere.

The U. S. Public Health Service ratings of the milk supplies of these nine communities are given below:

City	Retail Raw	Pre-Pasteurized	Pas-teurized
Atmore	96.3	.....	.....
Auburn	96.4	.....	.....
Brewton	92.7	.....	.....
Decatur	94.5	95.9	92.5
Flomaton	91.0	.....	.....
Opelika	98.5	97.8	98.0
Selma	96.1	.....	.....
Tallassee	98.2	.....	.....
Wetumpka	94.8	.....	.....

## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

### PURIFICATION OF WATER BY RAPID SAND FILTER PLANTS

Contributed by

R. P. Farrell

Assistant Sanitary Engineer

Purification of water by rapid sand filters has been highly developed and extensively used in the treatment of the muddy waters of American streams. This type of filter is easily cleaned, requires a relative-



ly small space, and gives satisfactory and economical results.

Water purification by the rapid sand filtering process consists of three essential steps, namely; the addition and intimate mixing of the coagulating chemicals with the water; the sedimentation of the greater percentage of the products of the chemical reactions together with enmeshed bacteria and other substances; and the removal of most of the remaining suspended matter and bacteria by the filters.

Various chemicals when added to water will react with substances naturally present in the water, forming a precipitate commonly spoken of as floc. This floc usually forms around small particles of suspended matter which act as nuclei. In the process of forming, the floc enmeshes small particles of clay, bacteria and other insoluble substances and settles to the bottom of the sedimentation basin, or is collected on the filter. The most commonly used coagulating chemicals are aluminum sulphate and iron sulphate. The amount and kind of chemical required depends principally upon the amount and character of the suspended matter in, and the chemical content of, the water treated. All of the alum or iron added for coagulation is removed in the purification process and the only change in the chemical content of the water is a slight increase in the amount of harmless chemicals normally found in natural waters.

Chemicals may be applied either dry or in solution, the important feature being to apply the required amount continuously at a previously determined rate as indicated by laboratory tests. In order to secure rapid and efficient coagulation the chemicals must be thoroughly mixed with the water. This is usually done by passing the water at relatively high velocities through a channel provided with baffle boards either of a vertical or horizontal type. Other means of mixing are by air jets or some type of mechanical stirrer.

The water, after the chemicals have been thoroughly mixed with it, is passed into the sedimentation basins. Water is usually applied to the sedimentation basins through some type of applicator wall. The purpose of the sedimentation basin is to slow down the velocity and permit the water to become

as quiescent as is practicable in order that the floc formed by coagulation may settle out. The floc gradually increases in size, absorbing or mechanically trapping the finely divided material in suspension together with a large portion of bacteria, and slowly settles towards the bottom. Outlet is usually from the top over some type of skimming weir. The percentage removal of suspended matter varies from 60 to 95 per cent, depending upon the quantity present, the effectiveness of the chemical treatment and the velocities of water in passing through the sedimentation basins.

Most of the remaining products of the chemical reactions and bacteria are removed by the filters. Only a small amount of harmless soluble substances will pass through a carefully operated filter.

A rapid sand filter is very simple in construction. It is a box which has a system of collecting pipes on the bottom to carry off the filtered water. On top of the piping system is placed a layer of graded gravel which in turn supports the filter sand.

One function of the filter is that of mechanically straining out the larger particles in suspension. However, its effectiveness in water purification is largely dependent upon the formation of a filter mat which is the real filtering medium. This mat is formed by the collection, on the sand surface, of small particles of floc which still remain in the water after sedimentation. It may be considered as a very fine mesh structure or porous framework through which water readily diffuses, but suspended particles and bacteria are held back either because they are unable to pass the mesh-like structure or because they adhere to the gelatinous mass. The continued accumulation of particles of suspended matter and bacteria on top, and in the top layers of the filter sand soon clog up the pores so that even water will not pass. To remove this accumulated material a simple means of washing the filter has been developed. Water under pressure enters at the bottom of the filter and flows at a high velocity up through the sand, carrying with it the lighter particles which have been deposited in the top layers of the sand and upon the sand surface. After the filter has been cleaned, it should be run for

a few minutes, allowing the water to waste while a new filter mat collects on the sand surface.

The rapid sand filter plant, if properly operated in conjunction with coagulation and sedimentation, will produce a satisfactory water most of the time. In recent years chlorine has been added to the filtered water as an additional safety factor.

## BUREAU OF LABORATORIES

L. C. Havens, M. D., Director

### AGGLUTINATION TESTS IN TYPHOID AND RELATED FEVERS

Contributed by

George A. Denison, M. D.,

Director of Laboratories, Jefferson County Board of Health

Typhoid fever, the paratyphoid fevers, and undulant or Malta fever so often simulate each other clinically that agglutination tests or isolation of the causative organisms are sometimes necessary in the differential diagnosis. Typhoid fever is, of course, the most important and most common, though there is considerably less known about the prevalence of the other three diseases.

Some time ago the Laboratories of the Jefferson County Board of Health undertook the routine examination for agglutinins for the paratyphoids and *Brucella abortus* on all blood specimens submitted for the Widal reaction for typhoid fever. The purpose of the study was to furnish a better service to the physicians of the county and to obtain a more accurate index of the prevalence of these diseases.

Agglutination tests for paratyphoid A and B have been routinely made since 1926. Agglutination tests for *Brucella abortus* have been made since 1929 when preliminary work with the dairy herds of Jefferson County indicated that over 36% of the dairy cattle were infected with contagious abortion.

#### Routine Agglutination Tests

Year	Total Specimens	Per Cent Positive Agglutinations			
		Ty-phoid	Br. Abortus	Para A	Para B
1926	804	7.71	—	0	0
1927	1237	8.57	—	.08	.16
1928	753	9.29	—	0	.13
1929	773	3.49	.90	0	.26
1930	738	3.79	1.62	0	.81
1931	463	4.31	.43	.22	.22
Total	4768	6.56	1.06	.04	.25

The results show a surprisingly low percentage of positive agglutinations. Of these positives, 90% were *Bacillus typhosus* agglutinations, the remaining 10% being distributed chiefly among *Br. abortus* and paratyphosus B. It is significant that only 10.6 positive agglutinations for *Br. abortus* were found per each 1000 examinations, 2.5 per thousand for paratyphoid B, and only 0.4 for paratyphoid A.

Twenty cases of undulant fever were reported during this study and all were confirmed by agglutination tests. However, a clinical diagnosis had been made in each case and agglutination tests with *Br. abortus* were specifically requested only for confirmation.

From this study it appears that the routine examination of specimens submitted for the Widal test, for paratyphoid A and B, and *Br. abortus* is not justified except when specifically requested by the physician. Since August, 1931 we have made only agglutination tests for *B. typhosus* on blood specimens submitted for the "Widal test", except where other tests were specifically requested.

An additional point of interest is brought out by a comparison of the positive agglutination results with the positive blood cultures obtained during the period of the study. Only 6.56% of the Widal tests were positive, whereas 8.6% of all blood cultures were positive for typhoid. When it is remembered that a positive blood culture makes the diagnosis certain, while a positive Widal result is not necessarily indicative of the disease, these results constitute a further argument in favor of cultural methods\*.

## CURRENT STATISTICS

### State Department of Health

#### \*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1932 Mar.	1932 Feb.	Total Cases to Date	
			This Year	Last Year
Typhoid	27	40	146	75
Malaria	37	39	141	169
Smallpox	45	11	250	97
Measles	23	8	70	6008
Scarlet fever	82	89	354	535
Whooping cough	146	93	357	188
Diphtheria	58	114	365	392
Tuberculosis	410	319	1080	1247

\*See this Journal, Vol. 1., No. 5. p. 221, Nov. 1931.



	1932 Mar.	1932 Feb.	Total Cases to Date This Year	Last Year
Pellagra	29	15	60	44
Meningitis	4	6	18	93
Tetanus	3	1	9	7
Influenza	383	297	1004	4280
Dengue	1	0	1	0
Polio myelitis	0	4	8	11
Pneumonia	331	429	1085	1759
Chickenpox	163	150	496	1087
Mumps	89	101	317	659
Encephalitis	0	0	2	14
Ophthalmia neonatorum	3	0	3	5
Typhus	5	3	14	6
Trachoma	0	1	1	2
Tularemia	3	7	14	4
Undulant fever	1	0	1	0
Rabies	0	0	0	0
Syphilis (private cases)	166	135	454	371
Chancroid (private cases)	7	5	21	17
Gonorrhea (private cases)	113	103	370	421

\*As reported by physicians and including deaths not reported as cases.

### PROVISIONAL MORTALITY STATISTICS Alabama, February 1932

	Number of Deaths Registered Feb. 1932			Annual Rate per 100,000 Population		
	White	Black	Total	Feb. 1932	Feb. 1931	Feb. 1930
ALL CAUSES	1046	928	1974	918.8	1145.2	1203.4
Typhoid fever	8	5	13	6.0	1.9	2.0
Smallpox						
Measles	1	3	4	1.9	14.1	4.9
Scarlet fever	3		3	1.4	2.4	1.5
Whooping cough	6	8	14	6.5	1.9	7.9
Diphtheria	9	3	12	5.6	4.9	6.4
Influenza	52	37	89	41.4	77.7	69.8
Pneumonia, all forms	127	77	204	94.9	150.6	149.9
Polio myelitis						
Tetanus	1	5	6	2.8		2.0
Tuberculosis, all forms	63	107	170	79.1	76.8	77.1
Tuberculosis, pulmonary	57	101	158	73.5	70.9	70.8
Malaria	4	1	5	2.3	2.4	4.9
Cancer, all forms	76	28	104	48.4	49.6	46.7
Diabetes mellitus	11	2	13	6.0	11.2	9.8
Pellagra	11	14	26	12.1	14.1	14.2
Cerebral hemorrhage, apoplexy	72	56	128	59.6	65.6	67.8
Diseases of heart	135	97	232	108.0	131.7	135.6
Diarrhea and enteritis						
Under 2 years	3	5	8	3.7	5.3	5.9
2 years and over	4	6	10	4.6	3.4	7.9
Nephritis	90	77	167	77.7	93.8	97.3
Puerperal state, total	20	17	37	17.2	17.5	16.7
Puerperal septicemia	8	3	11	5.1	5.8	3.4
Congenital malformation	5	2	7	3.2	6.8	11.8
Congenital debility and other diseases of early infancy	48	36	84	39.1	46.6	76.2
Senility	14	7	21	9.8	15.5	26.5
Suicides	19		19	8.8	6.3	6.4
Homicides	9	26	35	16.3	18.5	17.2
Accidental burns	7	11	18	8.4	12.6	13.2
Accidental drownings	2	4	6	2.8	3.9	3.4
Accidental traumatism						
by firearms	4	2	6	2.8	3.9	6.3
Mine accidents	1	2	3	1.4	1.5	3.9
Railroad accidents	2		2	0.9	4.9	6.3
Automobile accidents	28	10	38	17.7	17.5	12.3
Other external causes	28	10	38	17.7	15.5	22.6
Other specified causes	140	130	270	125.7	156.9	157.8
Ill-defined and un- known causes	43	140	183	85.2	109.8	108.2

### COMMENT

Attention is called to the very low death rate for February. Montgomery County deaths for this month are not included, owing to the fact that they were burned too late to be replaced before the tabulations were made. Even taking that into

consideration, the rate is the lowest we have had for February since Alabama was admitted to the Registration Area in 1925. February 1927, with a rate of 10.1 comes nearest to this record.

The low death rate for influenza and pneumonia has a very favorable influence on the death rate this month. The rate for the two causes combined is 40 per cent less than for 1931.

The death rate from heart disease was 18 per cent less than in 1931. Deaths from heart disease have shown a gratifying decrease for the past three years.

Death rates for typhoid and tuberculosis are slightly higher than for the past three years.

The death rate for 1931 was unusually low and the experience for January and February augurs well for 1932.

**Diphtheria Immunization:** Experience has shown that toxoid may cause local and general reactions in older children. So far these reactions are allergic in nature, and the opinion seems to be general that they are only unpleasant and never dangerous. On the other hand, all young children very rarely give local or general reactions. This fact is most important because it is the pre-school child that is most susceptible to diphtheria, and it is in this group that any prophylactic measure finds its greatest usefulness. Mortality statistics seem to indicate that it is conservative to state that the immunity of one child for the first five years of life is equal in its effect upon the diphtheria death rate to the immunization of three school children.

Older children and adults may be immunized with toxoid, but it is recommended quite generally that a test for sensitiveness to diphtheria proteins be made before the immunizing injections are begun. This test may be carried out either alone, or as a control for the Schick test. A small vial of diluted toxoid 1 to 20 is furnished by the manufacturers, and 0.1 c.c. is inoculated intracutaneously, as for the Schick reaction. A local area of redness at the site of the inoculation more than one-half inch in diameter, appearing within three days, is interpreted as a positive reaction, and indicates that the individual may give a local or general reaction to toxoid. These persons may receive toxoid in smaller doses, the first dose ranging from 0.2 to 0.5 c.c. of the 1:20 dilution, depending upon the degree of reaction to the intracutaneous test. Subsequent doses may be given at intervals of two weeks, and may be doubled if the local reaction from the preceding dose was not more than three-quarters of an inch in diameter. Reactions up to three inches in diameter call for a repetition of the first dose, while more severe reactions should cause the subsequent dose to be reduced. According to Defries these reactors are more easily immunized than individuals who are not sensitive to the diphtheria protein.—*Strong, New Orleans M. & S. J., April 1932.*

## Book Abstracts and Reviews

**The Great Physician, A Short Life of Sir William Osler.** By Edith Gittings Reid. 1931. Oxford University Press. 300 pages. Illustrated. Price \$3.50.

So extensive has become the bibliography of Osler that in 1926 Dr. Maude Abbott was able to compile a twenty-page list of the articles dealing with his life. The most thorough study of Osler is the stupendous work by Harvey Cushing which fills two large volumes. After that biography had been completed, there remained little to be added on the subject. Because of the length of Cushing's works, it is likely that most laymen and many physicians have hesitated to read them and thus have denied themselves the privilege of becoming acquainted with a truly great man. Edith Reid has condensed the facts gathered by Cushing and has added excerpts from some of Osler's speeches and letters. She has succeeded in giving to the general public an opportunity of becoming acquainted with the outstanding figure in American Medicine.

As one reads through the pages of this book, as one follows Osler through his early life and the years of preparation for his career, through his years at McGill University and Philadelphia, and then through the years when the Johns Hopkins Hospital and Medical College were being started, as one reads his letters to little children or romps with Osler in the nursery or laughs with Mrs. Osler at her husband's pranks, one sees a beautiful character unfolding. When one appreciates his plodding persistency in learning, his sympathy with all suffering humanity, his love of children, and his capacity to fire others with ambitions and ideals like his own, it becomes obvious that those who knew him well could see in him enough of Christ to have referred to him as the Divine Physician. His life should be an inspiration to anyone engaged in the practice of medicine.

C. K. W.

**Modern General Anesthesia, A Practical Handbook.** By James G. Poe, M. D.: Lecturer on General Anesthesia in the Medical and Dental Departments of Baylor University; Anesthesiologist of Baylor University Hospital of Dallas; Consulting Anesthetist to the Shriners' Hospital for Crippled Children and Parkland Hospital, Dallas, Texas. Second edition, completely revised and enlarged. 230 pages with 12 illustrations and two charts. F. A. Davis Company, publishers. Philadelphia. 1932. Price \$2.50.

Intended primarily for the student, interne, dentist, and general practitioner, rather than for the specialist in anesthesia, this volume deals only with the practical aspects of general anesthesia. There are excellent chapters dealing with the signs and symptoms which accompany the various stages of anesthesia; the details of administration of ether, nitrous oxide, and ethylene; and the various combinations of these gases; basal anesthesia in surgery and obstetrics with the non-volatile anesthetics—avertin, sodium amytal, and pernocton. The discussion of the factors determining the choice of anesthesia most suitable to various types of cases is of special interest. The author, who has had an extensive experience with ethylene anesthesia, emphasizes the precautions necessary to

render its administration free from the danger of ignition.

This is a very practical book for anyone interested in anesthesia.

C. K. W.

## Truth About Medicines

### PROPAGANDA FOR REFORM

**The Administration of Suprarenal Cortical Extracts.**—The efficacy of replacement therapy in cases of Addison's disease by the injection of suitably prepared extracts of the suprarenal cortex, freed as far as possible from the epinephrine liberated by the medulla of the gland, has apparently been established. For patients that tolerate intramuscular injection well, this is perhaps the preferable method of administration. The intravenous method is indicated when the patient is in crisis and an immediate response is necessary. The possibility of effective oral administration has recently been reported on. In cases in which prolonged treatment is demanded, the oral route may be of preferential utility. (Jour. A. M. A., January 2, 1932, p. 52)

**"Infra-Red".**—Under the incorrect and confusing name "Infra-Red" the Iodine Products Co. of Caney, Kansas, describes an office test to determine the degree of acidosis. The designation "Infra-Red" is applied to a "super-alkalized iodide." This test can do no more than determine the titratable acidity of the urine. However, this is not the method of choice in measuring the development of an acidosis. (Jour. A. M. A., January 2, 1932, p. 71).

**Nucleotide K 96.**—The Council on Pharmacy and Chemistry in a preliminary report on Nucleotide K 96 reports that Jackson and his collaborators reported their clinical results in the treatment of twenty cases of profound leukopenia by intravenous injection of unbroken pentose nucleotides, stating that fourteen patients recovered but that no conclusions can be drawn as to the efficiency of the material until a much larger series of cases has been adequately treated. The product used was prepared by the Smith, Kline & French Laboratories. The firm requested consideration of the product by the Council under the name Nucleotide K 96, stating it to be a mixture of the sodium salts of the pen-



tose nucleotides derived from nucleic acid. The designation "K 96" was used because this was the number of the preparation decided to be the most effective or most appropriate for intramuscular use, and the present product may be replaced by a more acceptable one. The Council deprecates the use of numbers in connection with names and believes that unless a series of similar preparations are to be released by Dr. Jackson that it will be better to use some such acceptable name as "pentnucleotide". The Council believes that pentose nucleotides or some similar preparation holds promise of instituting a new era in the treatment of a rare and usually fatal syndrome, but that the preparation now under consideration is not ready for general use by the medical profession. The Council held the product not to be eligible for New and Nonofficial Remedies at this time but, since the experimental evidence is adequate and the composition of the product sufficiently controlled, the Council issued this preliminary report on the product. (Jour. A. M. A., January 9, 1932, p. 142)

**Thromboplastin-Lederle** (For Hypodermic Injection) Not acceptable for N. N. R.—Because of the lack of evidence for the therapeutic value of thromboplastic substances other than those designed for external use, the Council on Pharmacy and Chemistry has omitted from New and Nonofficial Remedies preparations of thromboplastin designed for subcutaneous or hypodermic administration. The Council reports that Thromboplastin-Lederle, admitted to New and Nonofficial Remedies, 1923, was stated in the advertising to be intended for both external and internal use; that the firm's Thromboplastin proposed for external use has been accepted for New and Nonofficial Remedies; and that, since the firm still markets a thromboplastin solution to be administered by hypodermic injection, this preparation has been declared unacceptable. (Jour. A. M. A., January 9, 1932, p. 143)

**Carbarsone.**—The Council on Pharmacy and Chemistry reports that Carbarsone, according to the reports of Dr. C. D. Leake and his collaborators, who have been conducting preliminary trials of the amebacidal value of the product, is p-carbamino-

phenyl arsonic acid, and that the firm of Eli Lilly & Co., has collaborated with Leake in the production of the product and has agreed to undertake its manufacture. The Council reports that the evidence appears adequate to show the chemical composition of the product used and gives assurance that its purity and uniformity will be adequately safeguarded. The papers of Dr. Leake and of Leake and his collaborators present evidence to show that compared with other amebicides, Carbarsone seems to be effective; but the recurrences noted in monkeys after treatment suggest that a similar experience may be had in man, and that the clinical evidence as a whole is promising. The Council agrees with Leake and his collaborators that more clinical evidence of a confirmatory nature is desirable and has postponed consideration of Carbarsone for inclusion in New and Nonofficial Remedies to await the development of further clinical evidence of its value. (Jour. A. M. A., January 16, 1932, p. 230)

**Estivin.**—The producer's statement as to the composition of "Estivin" that it is an "extract of *rosa gallica* (red rose)" is indefinite and meaningless; the product has not been accepted by the Council on Pharmacy and Chemistry. The evidence regarding the efficacy of the product is conflicting. It is probably of little actual value, as patients generally are not enthusiastic about continuing its use. (Jour. A. M. A., January 23, 1932, p. 341)

**Thallium Poisoning.**—The dangers of poisoning by thallium has been reported on. Its use as a rodent poison originated in Germany about 1920. Later the remedy was introduced as a depilatory to be applied either locally as a cream or to be taken internally. During the past year or so medical literature has contained reports of severe poisoning following the use of a proprietary depilatory cream called Koremlu, which had for its active ingredient thallium acetate. In its action, thallium seems definitely to select nervous tissue. There is apparently no known certain antidote to the action of thallium. It is a cumulative poison of high toxicity, without taste, smell or other warning properties. (Jour. A. M. A., January 30, 1932, p. 406)

# THE JOURNAL

OF

## The Medical Association of The State of Alabama

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### THE PRESIDENT'S MESSAGE\*

TOULMIN GAINES, M. D.  
Mobile

The complexity of modern civilization provides us with such a multiplicity of subjects that might profitably engage our consideration that I shall follow the usual custom of my predecessors and stress the fact that according to our Constitution my message shall be devoted to a discussion of the interests, objects, organization and business of the Association.

In attempting to do this I must confess to finding myself rather overawed at the task of giving an analytical, and at the same time, a not too critical review of present conditions; to take a definite stand, but to scrupulously avoid partisanship; to be earnest without being aggressive; to advise without seeming presumptuous. Your President therefore sincerely hopes to present a message which will prove to be impersonal, impartial and unassuming.

I wish first of all to take this opportunity to thank the Association for elevating me from the ranks to the position of highest honor, if not of authority, and to assure them that I have tried by unremitting application to make up in zeal and industry for my deficiencies and otherwise unfitness for the position.

Regretting the insurmountable obstacles that prevented my attendance at the first meeting of the Northwestern Division, I am proud of the opportunity given me to attend the second one. I also attended the meeting of the Northeastern Division and of the Southwestern, beside visiting county medical society meetings in Choctaw, Bald-

win and Jefferson counties. Believing that just as agriculture is the backbone of the nation, so the rural profession is the backbone of our Association, I welcome every opportunity to give aid and impetus to the work of the country doctors and have been encouraged, stimulated and inspired by the character of the work that is being done. Reflecting on the ineptitude of my endeavors as a rural practitioner, I have been deeply impressed by the evidence of the great advance in the character and scope of medical service rendered by the country doctor who, instead of shifting his burden to other shoulders, now works out his own problems by local hospitalization and persevering personal preparation.

As I stated in the first issue of our Journal, the publishing of contributions from the profession throughout the State will be an added impetus to the careful preparation of papers, increase the interest in divisional meetings and tend to further raise the plane of professional achievement throughout the State.

While thus paying tribute to the practical efficiency of the Journal I would like to add my commendation of the department known as "The Forum" with its fairness in publishing articles in their entirety, although known to be inimical to the views of the editors.

I desire however to protest against editorial commendation or disapproval, the one by explicit endorsement, the other by tacit omissions of the official acts of the President. It is not the province of the Journal that the prestige of the printed page should be utilized in favor of any faction.

On page 25 of the Red Book, Article XIII, Sec. 6, we have these words, "submit the name of the officer so elected to the

\*President's address before the Association in annual session, Mobile, April 19, 1932.



Association (the State Board of Health)". On our monthly publication we have this title:—The Journal Of The Medical Association Of The State Of Alabama And Of The State Board Of Health. Owned And Published Jointly Each Month By These Two Agencies. As a consequence we read this in an editorial of the Journal of the American Medical Association, Oct. 17, 1931, "the Medical Association of the State of Alabama and the State Board of Health have co-operated in the issuing of a Journal of the two organizations".

This misconception of the nature of our organization is entirely justified by the wording of the title and was reprinted in our Journal without comment. I recommend that the Board of Censors make such changes in the title of the Journal as will remove the impression of two organizations, and as will conform to the Constitution of our unique Association. I also recommend that there be an editor-in-chief who is responsible for all editorials and inserted paragraphs, such, for example, as the quotation from the Board of Censors' report in 1882 with its factional implications.

Death has laid a heavy hand upon our Association during the past year. That it indeed loves a shining mark is all too truly exemplified in its striking down in quick succession two, who as members of the Board of Censors, had attained the highest rank within the gift of the Association.

Dr. A. L. Harlan, a past president and a life counsellor of our organization, was of twofold value to us in his dual position of Censor of our Association and Senator in our State Legislature. The loss of his services will be sorely felt.

Dr. J. M. Watkins, a man of energy and enthusiasm, represented a large number of the profession throughout the State, whose interests he assiduously guarded and whose rights he stood ever ready to defend. He will be deeply missed by his many friends and associates.

In accordance with the constitutional provision, I have temporarily appointed to fill these vacancies until this annual meeting, Dr. W. G. Harrison and Dr. M. O. Grace.

In regard to the amendment "That the State Health Officer shall not be permitted

to hold office as a member of the State Board of Censors", it would seem to me to be unnecessary to touch upon a subject that was earnestly urged by my predecessor, Dr. Groce Harrison and endorsed by the Board of Censors, and that I have advocated in a paper read before the Northeastern Division and subsequently published in The Forum of our Journal. As the entire purport of my message will be to make our organization more representative, I can find no validity in the argument that has been advanced that we should not make it impossible to make a retrograde step. As nations in their incipency need a strong, controlling, even despotic hand to lead them, but with development and education, become self governing, so with us the time is past when one man should dictate the policies and dispense the honors of our organization, and every constitutional provision should be enlisted to guard against a reversion to such a condition. The rather disdainful references to democracy, made by the chief opponent to this measure, seem to me to be arguments in favor of this amendment, especially when conditions have risen in more than one quarter, which would impregnably intrench an occupant of this dual office.

The recommendation of Past President W. Groce Harrison, that the Association be divided into sections, being endorsed by the Board of Censors and passed by the Association, and formal notification of this action being received by me from Secretary Cannon, without any further specific authorization, I considered it incumbent upon me to take whatever steps were necessary to effect this innovation. As there would be no opportunity for concerted action of the physicians constituting each of these groups prior to this meeting, which would have resulted in a postponement of this arrangement for another year and possibly longer from hesitation to assume leadership without authority, it seemed therefore necessary that chairmen and secretaries be appointed by the President as a temporary expedient to get the work under way as efficiently and expeditiously as possible. The appointments of secretaries were all made from physicians of the city in which the meeting was to be held, to in-

sure that the local arrangements were provided in every detail.

In appointing chairmen for the various sections your President has been blind to all personal or party ties but has selected them with an eye single to the scientific success of their respective subjects. To the criticism that the organization has been too much subdivided, my answer is, my unwillingness to discriminate against any one specialty. Suggestions as to number of papers, time allowance for leader and discussion were in the interests of uniformity, and not from any intention of dictating.

As Wednesday afternoon was the time appointed by the Board of Censors for the section meetings, at the request of the Entertainment Committee of the Mobile County Medical Society, I was given, by the Chairman of the Board of Censors, the authority to change the time until Thursday, for this meeting. There were three sections already organized, viz.: Urology, Pediatrics, and Ophthalmology. These three chairmen have co-operated in every way, including making their meeting coincident with the other sections, except that the Chairman of the Section on Urology thought it best not to change from the usual day and time of his section, lest it affect the attendance.

The Chairman and Secretary of Neurology resigned two months after accepting the appointment so that with the little time left, and without their co-operation, I considered that further effort to provide a section on that subject would be futile. The Chairman of Orthopedics has merged his section with the Surgical Section.

I wish to take this occasion to thank permanent and temporary officers of these sections for their services in formulating the plan, and assisting me to carry out the mandate of the Board of Censors. I wish to make the following recommendation, to-wit: That in the future each section should be permitted to elect its own officers, arrange its own programmes, merge with other sections by mutual agreement, have its own plan of organization; and in every way be self governing, except that it should hold its scientific session concurrent with the others at such time as appointed by the Association.

As reticence is now ridiculed as a Victorian hypocrisy I shall not ignore the subject of politics in our organization. Political parties are necessary, as only by a comparison of conflicting view-points do we arrive at the truth. No nation ever reached the height of its power until after a civil war, and our organization will continue to have its factional alignments until these controversial matters are subjected to the practical test and found by actual trial to be harmful or helpful. The conservative will always have his views tinged by trust in the old tried methods, will believe in the bridge that has carried him thus far. The radical will look askance at "tradition which will grow more tyrannous as time goes on".

President Moody, in his message to the Association in 1899, said:

"There has been for some time a tendency to introduce the methods of so-called politics into the affairs of our organization. The mutual interchange of influence for the present or future benefit of those supposed to be able to exercise it; the agreements that for present aid future support will be accorded; the suggestion of future nominations conditioned upon future success—all these things have been dimly but suggestively indicated by some of the features of past meetings."

The Board of Censors, in reporting on the message made the following comments:

"If the practice alluded to be permitted to continue very soon our meetings, instead of being devoted to scientific and sanitary discussions and the enjoyment of social pleasures, will degenerate into disgraceful caucuses, in which those men willing to descend to political methods will wrangle and bargain for office, and to defeat whom the best men of the Association will be driven to adopt electioneering methods. Thus the entire time of our meetings will be monopolized by campaigns and candidates, bargains and combinations, with all of the ill feelings and enmities that such struggles will necessarily engender."

Are not these words marvellously prophetic?

That the above described situation has been going on for some time and is growing more intense is as incontrovertible as it is regrettable. I acknowledge that I am saying this *mea culpa*, but I charge that practically every one of us should say "*peccavi*". The result is that sometimes not merely is the value of the scientific meeting impaired by the decreased attend-



ance in the auditorium but its progress is actually interfered with by the confusion and clamor that continues in the lobby.

Therefore since it was prophesied in 1899 that such practices would bring about the ruin of the Association and since it was agreed that they should be stopped, and since they have gone on ever since and the Association has endured, we have to deal with a condition that will continue, but should not be allowed to conflict with the other functions of our organization.

In 1907, 1912, and 1913 efforts were made respectively by Drs. Harris, McAdory, and Parke to change the day of elections, but with its habitual timidity toward any innovation the Association refused these attempts to modify its *modus operandi*.

Not deterred, however, by the fate of these proposals, I shall make another one, believing that we always will have, and always should have, two lines of thought, the one to change and the other to check, and because we will always have party alignments, each side numbering its adherents from those variously impelled by altruistic, egoistic, or fiscal motives. I therefore recommend that the election of officers be made the regular order of business on the first day of the annual meeting of the Association, at the afternoon session at 2:30 P. M.

The arguments in favor of it are: All political campaigning will perforce be done exclusively by mail and not in the halls of the Association; that it will insure prompt attendance on our opening day; that it will be of great value to the newly elected president to make contacts with the entire membership and not alone with one faction; that it will make for harmony and assuage personal partisanship; and that it will be of much value to him in making his scientific programme, which after all is his chief function. The scientific programme beginning Tuesday night at 8 P. M. will continue throughout the next two days unmarred by the distractions of caucuses and lobbyists.

The importance of the report of the Board of Censors and the fate of proposed amendments, of ethical controversies, or other judicial matters, will serve to keep

the attendance of at least the voting members at the final Friday meeting.

Upon the subject of voting, mindful of the strict regulations in the Red Book, your President recommends that the voters be segregated by several rows of seats, that the tellers be instructed not to go beyond that line to collect votes; and while he believes that what has been repeatedly reported to him, as an improbity, is in reality a courtesy, he suggests that, mindful of the enjoinder to avoid all appearance of evil, every voter be required to deposit his own vote in the hat, and that therefore the tellers be instructed not to accept more than one slip from each voter.

I recognize that the intrinsic value of the annual message of the President may be modified by the fact that his selection for that honorable office might sometimes be due to his political availability, rather than to any particular perspicacity, or analytical acumen that would make his survey of the existing status of the Association of especial significance. However, each having a different personal view-point should set things down fairly as he sees them, trusting that in the course of time the composite picture will prove of value.

In the present instance, coming from the rank and file of the organization, I am not restricted by the *esprit de corps* of the counsellors, yet I approach this delicate subject with due deference to that loyal body of men for whom I have the highest personal regard and professional admiration. And I appreciate that the gathering together of these loyal and experienced men year after year to prosecute the work of the Association, makes for a permanency of purpose and directness of accomplishment which might prove more vacillating and dilatory if left to an ever changing delegation, unfamiliar with the purposes of the organization and often appointed by the county society president for purely personal reasons.

That the qualifications of a counsellor shall be among other things "fidelity to the system of organization" has perhaps resulted in the counsellors being opposed to change and scant of criticism lest their loyalty be questioned. This has made for a rigidity in our organization that has retarded its modification to meet modern con-

ditions; has resulted in group control rather than state-wide representation; has deterred many of its members from full co-operation in its activities, and has kept others out of our ranks.

In 1899 it was noted in the President's Message that one-third of the doctors in the State were not members of our Association. In 1932 one-fourth of the white doctors of the State are not members. In 1899 there were twelve hundred members, in 1932 there are sixteen hundred. The number of non-members therefore remains approximately the same, viz.: four hundred. Why is this? Of course some of these are not members because they cannot obtain membership in a county society. But this falls short of accounting for the situation. What then is the reason? May it not well be because of lack of loyal representation?

If, as the Red Book says, "the crowning achievement of our system is the formation of the individual unit—the county medical society", then should that county medical society have representation. If as it says, "it should be the laudable ambition of every member of the Association to become a counsellor" then should be given more opportunity to realize that ambition. What incentive is there for a man who belongs to a society of thirty, which is allowed only one counsellor, while in his district a society of four has two counsellors; or in a district where a society of forty-five has one and a society of seventeen has three? What other representation has the county society? Its delegates are appointed and serve four days, they return and report; and their duties and privileges are gone. But the counsellor represents the Association throughout the year, and for a term of years.

If the county society has no counsellors, what relation has it to the Association throughout the year?

Let us compare the present status of the county medical society with its original position as the unit of the system as devised by Dr. Cochran. Then it was the county board of health. It elected the county health officer, and appointed a committee of public health, which reported its recommendations back to the county board of health before action could be taken.

Its sole prerogative now is to elect the board of health, which does not have to report its acts to the county society. This body elects a health officer subject to the approval of the State Committee of Public Health. Outside of its ephemeral annual delegation it is completely out of touch with the Association, except for the presence of its counsellors. What then of a county society that has none?

In what the Red Book characterizes as a masterful article of the late Dr. Sanders in the 1914 Volume of Transactions, we have truly a powerful and complete exposition of our system of organization as it then existed but it is somewhat inapposite now that many of the points so exhaustively analyzed have, despite their able defense, been changed in favor of a more adequate representation. There we find every argument advanced for giving each county society only two delegates, but now we have a proportional representation. In like manner the counsellors are considered from the standpoint of lifetime appointments, but now they are elected for a term of years. In discussing the value of restricting the delegates to two from each county Dr. Sanders drew a parallel with our national senate which is composed of two from each state without reference to population.

In explaining the philosophy of the counsellors, he compares their continuity in office to that of the senate, as making for stability, experience and coherence. This is drawing the deadly parallel once too often as surely both the delegates and the counsellors are not prototypes of the senate. By giving a proportional representation to the county societies parallelism to the senate has been negatived. By changing the counsellors from a life tenure to a long term, the similarity to the senate has been strengthened. If therefore the county society be indeed the unit of our organization, and since it be true that the tie that binds some of them has become tenuous, it seems to your President that a measure that would not disturb the present incumbents but would give a more complete and satisfactory representation would be to give each county at least two counsellors, the proportion in other counties remaining unchanged. This would add fifty-



six counsellors to the present number of active counsellors. The answer to the objection that our founder warned against an increase in the number of counsellors is that the counsellors then had a life tenure, instead of being subject to election at intervals; and that the number of delegates was a smaller and a fixed number while it will grow larger with the development of our population.

Carrying out this same idea of more generalized and therefore fairer representation, I recommend that the State Board of Censors should be so selected as to consist of one counsellor from each congressional district and one representing the State at large. This could be effected in three years by replacing the two members whose terms expire with members from districts not represented on the board.

If it seems to some to be too radical and a loss of ideals to select our representative men with regard to regional distribution rather than to personal qualifications, I hold that there can be found throughout the length and breadth of the State, men with the qualifications of counsellors, viz.: liberal culture, devotion to scientific and practical medicine, and fidelity to the system of organization. When we are empowered to pick the "best" men in the district for the counsellors, or the "best" men in the State for the censors, does not this wider range and latitude give more scope for the selection by the party in power to choose men best suited to subserve their interests, while the restriction of the selection of counsellors from special counties, and the restriction of the choice of censors to definite districts, would make it more likely that the most representative men of those localities would be chosen regardless of factional alignments in the Association?

Let us recall what Dr. Cochran considered the criteria for counsellors, in Transactions 1888, and repeated with approval by Dr. Sanders in 1914. "We expect them to be always ready to spend their time, their money and their influence in our service. They should therefore be able men, picked men—men who in the largest measure can command time, money, and influence, indeed we might apply to our counsellors . . . :

"Theirs not to make reply,  
Theirs not to reason why,  
Theirs but to do or die."

Does anyone wish to be chosen in order to have his purse opened and his mouth closed?

Dr. Cochran said:

"It is inevitable and it is right, that city doctors should predominate in the College of Counsellors. It is a tendency, not indeed to be repressed, but to be restrained—in a word, to be kept within bounds so that it may not swallow up everything else. . . . While the principle of geographical distribution, according to population, is not to be ignored, it will not do to act on it too rigorously; and any attempt to distribute the counsellors amongst the doctors of the several counties of the State in strict proportion to their numbers would, we are convinced, be unwise and inexpedient."

While according all honor to the far-seeing sagacity of our immortal founder, the tradition of his infallibility has grown until now we can hear his spirit invoked in every controversy, since opposition to any measure presented under the aegis of his name is supposed to savor of *lese majesty*.

However, it seems to me that it is an injustice to his memory and to his mentality to consider that with the passing of nearly two score years he would not have modified his views to cope with the exigencies of modern conditions. In 1900 Dr. Sanders, spokesman for the Board of Censors, declared that the "only justification for departure from the high ethical standard that formerly prevailed on this subject (contract practice) lies in the changed social condition and the immense industrial developments that have taken place in our country". So if the living Sanders saw the necessity of change because of changed conditions, would not the keen mind of Cochran have envisioned the change in his environment? What would he now see instead of the man who without education could attend an ungraded medical school for two years of its repetitious curriculum, pass an "easy county board" and settle in any county to assume the position of a medical authority in his community? He would now see the country protected and cared for by men who have fulfilled the requirements of a preliminary education, have profited by a two-year pre-medical course; have passed satisfactorily the ex-

acting examinations of a multifarious four-year course of medical studies, and now after two years practical experience in metropolitan hospitals, with the approval of the State Board of Examiners, are well prepared to protect the well and save the sick, and to represent their community in the ranks of their State Association. Seeing this he might again say "the principle of geographical distribution is not to be ignored" but would he again say "any attempt to distribute the counsellors (or the censors) among the counties or in accordance with the districts would be unwise and inexpedient? No! But he would doubtless repeat that the tendency of the city doctors to predominate "should be kept within bounds lest it swallow up everything else".

Finding as he would, that our Cerberus of health has developed two channels of deglutition, capable by confluence of controlling the entire body, he would see to it that the true source of sustenance was not allowed to atrophy but was developed to meet the need of asserting its ascendancy, in determining the course and deciding the fate of our organization.

I also recommend that delegates of county societies be elected in all societies and that the option given in Article X, Section 1, to "elect or appoint delegates to the Association" be changed to read, "shall be elected". My reason for this recommendation is that it gives a greater assurance of actual representation, the presidents being elected in rotation as a personal compliment and their appointments often made from the same motives. I do not mean to characterize this method as reprehensible but merely believe that it does not make for representation as completely as would the electoral method.

Noting that some of the standing committees are named by their chairmen and others are appointed by the President; that some are for a definite term and in others no term is specified, I recommend that the method of appointment and term of office be made uniform on all standing committees.

I wish to thank Dr. J. Norment Baker for his courteous co-operation with me at all times and as you well know, his efficient work needs no commendation at my

hands. On many occasions I have given a glowing account of the wonderful accomplishments of our health department to the public who have seemed much impressed, and I feel sure have been made unreserved allies in the work. As some of my confreres present here today can testify, I have carried the message to Garcia and shall not make the termination of my office an end of my endeavors, but shall at every opportunity, utilize my increased conversance with the health department's accomplishments to obtain added allegiance from the public and profession.

I addressed a circular letter to the health officers, with the idea of getting an expression of their needs and problems. It was answered by a little more than one-third of the county health officers and only a few reported any friction between the practitioners and the health officers, and those believed, and in some instances had experienced, that a personal interview was all that was necessary to clear up misunderstandings and promote harmonious co-operation. The charge that I hear oftenest brought against the health department is that in performing free immunizations they are depriving the doctors of fees. Though at first glance this may seem incontrovertible, I believe that further consideration will show it to be true only to a limited extent. What proportion of those who apply for this free immunization would have it done if they had to pay the usual physician's fee? Suppose the health department announced that they would give immunizations to the indigent only. This would decrease the number of applicants but increase of the physician's work would be negligible. Nor would the advice of the health department to go to your physician to be immunized be heeded often unless the individuals believed the danger to be imminent. By giving a practical demonstration of the value of this work, by educating the masses, the demand for it will become practically universal and the doctors will then do this work for the class best able to pay for it. If this forecast of financial remuneration seems remote would the physician's finances be improved by abolishing this work of the health department? Would the practicing physician educate the public to the importance of this



work as the health officer does? Would he insist on his patients having the work done at the risk of being considered mercenary? Would he be conscientious and equally insistent with his poor-pay patients? Granting that he would do enough of this to increase his fees it is undeniable that the protection of the people would not be near so widespread if left to the desultory care of the practicing physicians, as it is under the organized guidance of the public health officials. If then, the public health is best conserved by free immunizations let the individual practitioner take his minor losses without a murmur and see that the age-long claim of our guild, that we are the most disinterested of all professions in that we seek to destroy our own means of livelihood, is not an empty boast that fails when the actual test arrives.

The following verbatim excerpts, taken from letters from county health officers, will be of value in giving us an appreciation of the situation:

"Every health officer knows that unless he has the co-operation of the medical profession in his county he labors under a very great disadvantage and will not be able to carry out his health programme in an efficient manner."

"Health officers should strive to get every doctor in his county to understand that health work does not and is not intended to oppose the regular practitioner, but is an adjunct to the physician in that it aims at the education of the people against the patronage of quacks and patent medicine nostrums, and encourages people to go to their physicians for periodic examinations and examinations early in every disease. Also they stand ready at all times to assist the physician by laboratory tests."

"In the long run it seems that the health officer is an advertiser for the physician when you consider the school work, pre-school work and other activities which should send patients to their physicians in order to correct the defects, as some patients are not conscious of these defects until found by the health officer—not having been seen by a physician previously. The health worker is at all times endeavoring to send patients to the practitioner."

One letter most aptly says:

"The real way to control typhoid fever is by sanitation, and we have to beg the question with the profession regarding the administration of vaccine, as a prophylactic measure. Still as health workers we feel that we should not allow our people to die with the disease while we are educating them in sanitation. Therefore we feel that we should continue this and have the hearty support of the profession."

Another says:

"Until our practitioners and our general population are better trained in the technique and the value of preventive medicine that much of this line of work will have to be carried on by the health department. . . . As the general profession demonstrates its willingness and ability to take over many of the activities now being carried on by health workers, the health department will be glad to step aside and allow them full sway."

Dr. Felix Underwood, ex-President of the Southern Medical Association and, as we all know, the efficient health officer of our neighboring state, Mississippi, writes these words in a national newspaper:

"With both physician and health officer working steadily at the job, it will be many years before preventable diseases are brought entirely under control; with the practicing physicians only doing preventive work, at the now existing stage of public interest, it will never be done. Public schools are for the prevention of illiteracy, not for the children of indigent parents only, but for all. County health departments are for the prevention of all preventable sickness and deaths and the service is not for the benefit of paupers only, it is for all alike. Public health cannot be placed upon the basis of charity any more than public education can."

One very tersely thus sums up the subject of the scope and limitations of the activities of the Health Officer:

"The code prescribes that the health officer shall not engage in the practice of medicine, charitable or otherwise. Health officers should be allowed to practice any method to prevent disease whether charitable or not, but should not be allowed at any time to treat the sick regardless of financial condition."

There were several suggestions along the line of securing adequate financial aid from county authorities, such as making the health appropriation a preferred claim to prevent it being used as a political cudgel; another that it be on an *ad valorem* or per capita tax basis rather than by political expediency through courts of commissioners, and thereby removing local county health units from local politics.

Another says:

"There seems to be a growing idea among general practitioners that all health officers and even the State department is leaning toward State medicine, and I feel that this idea should be corrected, to prevent a final disruption between the two fields of endeavor."

I wish to say on this subject that I know that this idea is prevalent but I believe it to be the result of confusional thinking. State control of preventive medicine and State control of curative medicine are two separate and distinct propositions, the misunderstanding being caused in part by the fact that the term State medicine was formerly used in reference to public health before this bogey appeared to disquiet the apprehensive. A half century ago my honored grandfather, in his Presidential Message, urged State medicine as the highest duty of our organization, and, although the term has now become altered in its meaning, what it then stood for, the protection of the public health, has always been the *raison d'être* for our existence and the cause of our uniqueness among the medical organizations of the world. The progress toward perfection of this department of our work need carry with it no fears of socialistic encroachments on the practicing physician.

A present-day French author makes one of his characters say, "Have you noticed that men have definite ideas only on subjects they have never thought about?" This is not so paradoxical as it sounds as the ignorant person is unaware of the arguments with which his position could be assailed. Freud states that we have no opinions but merely inherent prejudices to justify which we elaborate specious arguments.

It has always been said there are two sides to every question, but with the complexities of modern conditions there are generally many sides to most public questions, reflection from the many facets resulting in blinding rather than illuminating. It shall therefore not be my purpose to attempt any oracular judgments on such abstruse problems as Contract Practice or State Medicine. They may not mean the march of progress or the advance of civilization, but they do mean the resistless inevitable *tempora mutantur*, which we are impotent to resist. What does it avail the aristocrat to bewail the encroachments of commercialism? The aristocrat gives way protesting to the last and a new order takes the place of the old, with its advantages as well as its defects. There may be less culture but more competence, lowered indi-

vidual ideals, but broader sympathies with the masses. These changes do not come as cataclysms overturning everything and producing chaos. They are gradual elevations and subsidences, and compensatory conditions will gradually develop to modify and accommodate us to these changes. Dame Partington could not sweep out the Atlantic, it came into her doors in spite of her strenuous mopping, but her floor was doubtless well scoured and she was better and wiser for the experience. The tide of State medicine may be steadily rising, but the elect of the profession will never be engulfed.

There may come a time when a solution is found for the double problem of providing the man of moderate means with more complete medical facilities, and at the same time providing the physician with more adequate pay, but even at that far distant day, it is my "definite idea" that there will still be many individuals, and especially in this individualistic country of America, who will insist on the personal care of a personal physician of their own choosing. Let us not like the savage who seeks to scare away the storm by beating on his tom-tom, keep up a continual uproar about this little cloud of State medicine, which is yet on the horizon, but let us gird up our loins and prepare ourselves to face it, to be the chosen few, and, to paraphrase a once well known line, those who determine every day in every way to become better and better doctors, have nothing to fear from the distant advent of State medicine.

Twenty-five years ago when I was permitted to represent this Association as its orator, my message stripped of its verbiage was a demonstration that medicine was a science and that the medical education of the people is the solution to most of our problems. Medicine has never been more securely seated among the sciences than today, taking a prominent part in all purely scientific advancement. As to the medical education of the people I am not chanticleer enough to think that the sun rose because of my crowing, but with the rise of medical science it has gratified me to hear the ever increasing chorus that heralds it to the public. Here are two statements by Dr. Judd in his presidential address before the American Medical Association last



June: "Very rapidly medicine is becoming a more exact science." "The idea of medical education for the public is not a new one, but the importance of it is more fully realized now than it was in former years."

One of the advantages that I mentioned at that time was that the medical education of the public would raise the plane of the profession since it would enable the layman to discriminate between the ignorant and the educated physician. Never before was the layman so avid for medical knowledge and never before has it been so plentifully provided. Medical subjects are discussed by competent physicians in a style comprehensible and entertaining to the general public and the self satisfied physician had better be wary lest his once blind followers now note the chinks in his armor.

I also urge upon the older doctors that they assiduously add to their knowledge by assimilating the new ideas, while their young confreres are as laboriously acquiring the controlling and correcting effects of experience. A stream can rise no higher than its source. The unit of the Association is the county society but the unit of the county society is the individual physician. Let us by this mutual emulation raise the plane of the profession higher and higher so that our attainments will be reflected in the character of our contributions to the scientific meetings, our development will be demonstrated by our loyal support of the health activities; and our progress will be utilized to inspire the confidence and enlist the co-operation of the laity. Thus armed with knowledge which is power, looking forward not backward, revering not reverting to our past, but fearlessly facing our future, equipped to cope with the changing complexities of modern conditions, and undeterred by the lowering clouds of socialism, we, who "have ever hoped for better things," will by deserving attain them.

I know of no more fitting words with which to close than this verse quoted by the president at the last annual meeting of the American Dermatological Association:

"New occasions teach new duties,  
Time makes ancient good uncouth,  
They must upward still and onward  
Who would keep abreast of truth."

## PRACTICAL POINTS ON THE DIAGNOSIS AND TREATMENT OF THE SO-CALLED LYMPHOBLASTOMA GROUP OF DISEASES\*

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### HODGKIN'S DISEASE

I have had the opportunity of seeing a great number of cases of Hodgkin's disease, mycosis fungoides, lymphosarcoma and leukemia cutis and have been exceedingly concerned by the unusual skin manifestations in some of these patients, oftentimes long before any constitutional symptoms appeared. It has occurred to me that not only may it be of some interest to you to review with me a few of these cases, but that, from a general discussion, we may, by sharing and correlating our several observations make early diagnosis more simple and possibly contribute something in the search for the cause and the cure of these almost uniformly fatal affections.

Because of the similarity which often exists in the clinical pictures and in the pathological findings in the various stages of Hodgkin's disease, mycosis fungoides, lymphosarcoma, and leukemia cutis, the question of their common origin has frequently been raised, and in recent years, there has been an increasing tendency to classify these four under the heading "lymphoblastoma". While I am more or less willing to associate Hodgkin's disease and lymphosarcoma, I cannot help feeling that leukemia cutis, Hodgkin's disease and mycosis fungoides are unrelated and that each is a separate entity. There are cases in each disease so typical that no experienced dermatologist would hesitate to make the correct diagnosis; it is the atypical cases which are responsible for the confusion. But, of course, this uncertainty is not limited to these diseases, for many affections with entirely different etiology may be so similar in some clinical forms as to disal-

\*The Jerome Cochran Lecture delivered at the annual session of the Association, Mobile, April 20, 1932.

low differentiation either macroscopically or microscopically.

Tuberculosis of the skin, syphilis and leprosy in some aspects afford striking examples of the difficulty one often has in making a diagnosis. Any one of these presented before a dermatological section may bring forth differing opinions, and histological sections from the same lesion may be interpreted by different pathologists as any one of the three diseases.

The late Dr. Kyrle of Vienna used to tell that sections from lesions of proved tuberculosis and proved syphilis were presented to a congress of European pathologists and from their discussion as to the diagnosis, it was concluded that in certain stages, a pathological differentiation in these diseases was impossible.

While no one depreciates the inestimable value of pathology in determining the distinctive nature of the disease, I think we sometimes lose sight of the fact that after all, laboratory study must serve as an aid in making a diagnosis rather than as the chief factor in establishing it.

Of the lymphoblastoma group of diseases, Hodgkin's disease is probably the one which we see most often and the disease which presents the most varied skin manifestations. While the name lymphogranuloma is commonly associated in one's mind with a glandular tumor, in reality that symptom is often preceded years before by changes in the skin, nails and hair. These minor and secondary changes are frequently overlooked, the physician's attention being focused on the more serious aspects of the disease.

Dr. Harold N. Cole remarked in this connection (J. A. M. A. 69: 341, Aug. 4, 1917) that cutaneous lesions in Hodgkin's disease are not noted because they are not sought. He found that 13 out of 33 cases reported had had skin manifestations.

Ninety-eight per cent of the cases I have seen (practically all) have showed so-called toxic or secondary symptoms in the skin. These have included one or more of the following: changes in pigmentation; dryness, thickening, roughening, scaling; follicular papules simulating goose flesh and feeling like sandpaper to the touch; papules; vesico-papules; excoriated papules; urticaria-like lesions; dermatographism;

transient swellings; erythematous macular areas; hemorrhages; icterus; exfoliative dermatitis; alopecia; dystrophy of the nails; and the most frequently met symptom, that of itching. Without doubt, the most characteristic of the skin lesions is the scattered, excoriated papule, and this, when associated with intense itching and pigmentation, always arouses the suspicion of Hodgkin's disease, whether there be glandular enlargement or not.

Case No. 1: Miss D. C., aged 20, white, American, single, was admitted to the City Hospital June 30, 1927, complaining of itching and dryness of the skin and enlargement of the glands in her neck, of 2 years' duration. Aside from measles and mumps in childhood, she had always been well and strong. Family history negative.

The present illness had begun two years previously with intense itching and dryness of the skin over the body and extremities. This continued for 1½ years with recurring red papules scattered here and there over the body and extremities, and was finally "cured" by her family doctor with sulphur ointment. Two months ago, the skin condition recurred in a more aggravated form, followed in about a week or ten days by the enlargement of the gland on the left side of the neck, and one month ago, with a similar enlargement of the glands on the right side of neck. She had lost 30 lbs. in weight in the past two years. In the past six months she had noticed increasing weakness and fatigue on slight exertion. She had not menstruated for one year. She had had several x-ray and radium treatments over the glands of the neck and over the skin, without relief. There had been no appreciable change in the size of the glands.

*Physical examination* showed a pale, fairly well nourished young woman, not acutely ill, with large swellings on either side of the neck, prominent eyes and loss of the outer margin of the eyebrows. There was a universal dryness and thickening of the skin especially marked in the flexor surfaces of elbows, groin, inner aspects of thighs and backs of knees, where the lines of cleavage were accentuated. The skin was rough with bran-like scaling and on the legs and outer surfaces of the thighs



and arms the follicles were prominent, many being filled with horny plugs and feeling to the touch like a nutmeg grater. There was a generalized brown pigmentation, studded here and there with pea-sized, excoriated papules, some flesh-colored, some erythematous; these were more



Hodgkin's disease with brownish pigmentation of face, loss of outer extremities of eyebrows and enlarged cervical glands—Case 1.

numerous on the trunk and extensor surfaces. The finger-nails were thin and short, some scaling, striated, grooved and decidedly atrophic. There was a total absence of suprapubic and axillary hair and a partial baldness over the occipital region. Chest expansion was poor. There was dullness on percussion on the left side anteriorly at the level of the third rib and extending into the axilla. Breath sounds and local fremitus were increased over this area. The heart examination was negative. Blood pressure 114/50. The spleen was palpable 2 cms. and the liver 4 cms. below the costal margin; both were smooth and not tender. Pupillary and deep reflexes were active and equal on the two sides.

#### Blood count:

Hgb. ....	50%
RBC .....	3,370,000
WBC .....	11,900
Polys. ....	88
L. mono. ....	9
Lymphocytes .....	3

X-ray of the chest was negative.

The patient died 40 days after admission, of bronchial pneumonia. Histologic section of a removed gland showed Hodgkin's disease.

*Diagnosis:* Hodgkin's disease.

This case is particularly interesting in that her cutaneous symptoms were present about two and a half years previous to her glandular swelling, and because she presented so great a number of secondary skin lesions.

Case No. 2: I remember quite vividly a man aged 40 whom I saw in 1923 with Dr. Fordyce. His complaint was an intense itching, of two and a half years' duration, over the arms and legs.

He was a well developed and well nourished man. Over his arms and legs were about two dozen discrete excoriated pea-sized papules; the skin was dry and of a brownish color and somewhat thickened. His general physical examination was otherwise negative, as were also his blood count, Wassermann and urine tests. The itching was not relieved by antipruritic remedies, including x-ray. About two and a half months after we first saw him, an almond-sized gland developed in the left groin, followed in a fortnight by a large swelling on the right side of the neck just below the ear. This was hard, irregularly lumpy, tender to pressure, and measured 8x9 cms. in its largest diameter. This mass disappeared and reappeared several times. The spleen was palpable at this time.

Dr. Fordyce presented this case before a group of visiting dermatologists who agreed on the diagnosis of Hodgkin's disease and sections of a gland removed from the neck confirmed this.

The patient became gradually weaker; about five months later more large glands appeared and he was sent to a hospital.

X-ray pictures of the long bones were negative. Pictures of the chest showed

marked peribronchial infiltration in the right lower lung.

While he was in the hospital a second gland was removed, a section from which was diagnosed as probable lymphosarcoma.

The patient failed rapidly and died 40 days after his admission to the hospital.



Hodgkin's disease showing scratched papules and erythematous pigmented and hemorrhagic plaques—Case 2.

While his earlier symptoms and clinical course were suggestive of Hodgkin's disease, apparently confirmed by the pathological findings of the first gland removed, before his death there was evidence of a large mass in the left upper quadrant invading the pleural cavity, a sign causing several internists who examined him to suspect lymphosarcoma; this suspicion was strengthened by the report of the histological study of the second gland removed.

The disappearance and reappearance of the mass in the neck was quite extraordinary.

\* \* \*

Dr. Hiram R. Miller (*Archives of Derm. & Syph.*, Page 156, Vol. 17, 1928) cited a case with a toxic bullous eruption in con-

junction with a condition clinically diagnosed as lymphosarcoma. At autopsy, one of fifteen glands examined showed a classical picture of Hodgkin's disease while the other fourteen were definitely sarcomatous. Dr. Paul A. O'Leary in commenting on this report said: "In a recent review of 460 cases of Hodgkin's disease and lymphosarcoma I found 73 that the pathologists classified as lymphosarcoma of the Hodgkin's type. The pathological report indicates that there may be a transitional phase in which it is impossible to classify the disease definitely, but that subsequent pathological study . . . may permit a definite pathologic diagnosis."

While secondary skin lesions in Hodgkin's disease are very common, true primary Hodgkin's disease of the skin is exceedingly rare, and the following case is the only one which has come under my observation. The diagnosis was made postmortem. In all the literature which I have seen on the subject, I could find reports of only 32 such cases and many of the diagnoses were also made at necropsy.

Case No. 3: Mr. M. H., aged 56, American, white, was admitted to the City Hospital on March 8, 1927, complaining of pain and swelling of the extremities, tender lumps over body, and difficult urination, all of three months' duration. The admission diagnosis was metastatic carcinoma. He had had inflammation of the bowels in childhood, and had been constipated ever since. He admitted gonorrhea 20 years previously. Fracture of the arm 15 years before. Family history irrelevant.

His present illness had begun with a loss of 75 lbs. in weight, all in the past year. His best weight had been 220 lbs.; his present was 150 lbs. He complained of frequent, generalized headaches and weakness, of six months' duration. Three months previous to admission he had noticed a swelling of the legs and the appearance of a few nodules over the body. Suddenly, other numerous painful nodules appeared over the body and extremities. He had had no other symptoms. The nodules had become more numerous with increasing loss of weight and the patient became much weaker. Physical examination showed an emaciated, pale, white man with numerous nodules over the entire skin, in-



cluding the scalp, face, trunk and extremities. The tumors varied in size from that of a small pea to an English walnut, and were subcutaneous and intracutaneous. The subcutaneous nodules were freely movable, some hard, others dough-like in consistency and with no change in the color of the skin. Many of the cutaneous nodules were bluish in color, hard, and moved with the skin. The skin over the upper and lower extremities, especially on the extensor surfaces, was tremendously thickened and infiltrated with nodules, the color of the skin being a bluish-purple. Over the left malar bone area of the cheek, was a granulomatous, fungating ulcer the size of an English walnut. A tumor of the same size involved the greater portion of the front half of the tongue. This tumor was verrucous and papular, red and ulcerated. Just in front of the right elbow was an irregular shaped, sharply demarcated ulcer measuring 3x2 cms. It had a granular base and somewhat simulated a gumma. Both liver and spleen were slightly enlarged and smooth on palpation. Heart and lungs were negative. Blood pressure 100/64. All the superficial glands were hard and of pea to almond size. X-rays of the chest showed no infiltration or consolidation of pulmonary fields; no enlargement of lymph nodes at the root of the lungs. X-rays of all large bones showed no evidence of metastasis.

*Blood count:*

Hgb. ....	40%
RBC .....	3,200,000
WBC .....	8,900
Polys. ....	67
Lymphs. ....	33

*Urine:* Negative.

*Blood Wassermann:* Negative.

The patient became weaker and died of pulmonary oedema two weeks after admission. I made a clinical diagnosis of metastatic melanocarcinoma, probably secondary to the lesion on his cheek.

*Autopsy Report—*

**General:** The body was that of an elderly white male of large build, markedly emaciated. All the lymph glandular groups appeared to be enlarged, the nodes being discrete and soft. This was more marked on the left side than on the right. The

right arm and leg showed a nodular involvement of the skin and subcutaneous tissues, evidently by tumor growth, as was demonstrated in sections from removed tissue. On the face were several nodular masses with ulcerative tops and on the lower lip one presenting on the buccal side. The abdominal and chest wall contained numerous nodules over which the skin could be moved freely. The ribs were evidently not affected.

**Head and Neck:** The scalp and forehead were found to be extensively infiltrated with tumor tissue connected with the skin. The skull showed no external abnormality. The brain was normal grossly. The dorsum of the tongue was covered by a group of papillary growths varying from .5 to .15 cms. in diameter, with indurated margins and, occasionally, necrotic centers. Sections showed these to be attached to the underlying tongue mucosa and muscles with accompanying induration of the normal tissue. The thyroid contained small, nodular masses of tumor tissue. The cervical nodes were enlarged and discrete, most marked on the left side. Section showed these nodes to be soft, white and evidently containing tumor masses.

**Thorax:** The peribronchial and buccal lymph nodes were enlarged and resembled tumors on section. There was blood tinged excess pericardial fluid. Heart walls were hypertrophied, and showed brown atrophy; the valves were negative, and in the interauricular septum was a small, nodular mass which on section was evidently tumor. The aorta showed sclerosis. There was excess of clear fluid in the pleural cavity. Both lungs had areas of induration, irregular in distribution. Section showed pneumonic involvement and patches of nodular tissue resembling the tumor masses.

**Abdomen:** No excess peritoneal fluid. The mesenteric and retroperitoneal nodes were everywhere enlarged and on section showed complete replacement by tumor.

The liver showed nodules of tumor masses.

The stomach, duodenum, pancreas and spleen were not grossly abnormal.

The left kidney showed masses of tumor tissue.

Ureters and bladder were clear.

The prostate and seminal vesicles were involved in massive tumor infiltration which had destroyed the normal tissue make-up.

*Diagnosis From Autopsy:* Hodgkin's disease.

This case was of unusual interest to me, not only because of the rarity of true Hodgkin's disease of the skin, but also because of the multiplicity of lesions which, when considered as a group, suggested a diagnosis of melanocarcinoma rather than Hodgkin's disease. He had not only cutaneous and subcutaneous nodules and hemorrhages in the skin but also the ulcerating lesions on the cheek, elbow and tongue, described by Alderson as of a gummatous type. (H. E. Alderson, Jour. Cut. Dis. 35: 481, 1917.)

\* \* \*

While there is very little definite knowledge of the etiology of any of the diseases belonging to the lymphoblastoma group, recent experiments by Dr. Elise L'Esperance (Annals of Surgery, Jan. 1931, page 162) tend to support the belief long held that Hodgkin's disease is tuberculous in origin. She took material from the enlarged nodes of six cases of Hodgkin's disease which had been proved clinically and histologically, and injected it into chickens; at autopsy, in every instance, the fowls showed lesions of avian tuberculosis in the liver and spleen, with the typical Sternberg-Reed histology. Acid fast organisms and granules were found in direct smears and stained sections, and cultures on egg media gave a growth with the characteristics of the avian tubercle bacillus. She also did cutaneous tests, using avian tuberculin, and obtained strongly positive reactions in several cases. She concluded that Hodgkin's disease may represent an atypical tuberculosis, possibly avian in type. Her tests offer a new approach to the study of the origin of Hodgkin's disease.

#### LYMPHOSARCOMA

While lymphosarcoma is primarily a disease of the lymph organs, occasionally one sees secondary lesions of the skin, most commonly itching, a symptom which often accompanies all the diseases of the glandular system. Occasionally, one finds excoriated urticaria-like papules and purpuric areas in the skin that are non-specific, as illustrated in the following case:

Case No. 4: Mrs. S. consulted me on Feb. 24, 1928, complaining of severe itching and eczema of about three years' duration. Past and family histories were negative. She had always had unusually good health until about three years ago, when she developed an intensely itching and recurring papular condition simulating mosquito bites over her body and extremities. She had been treated by several physicians for eczema with no improvement in the itching, although no new lesions had appeared.

Examination showed a pale, thin old lady of 71 years with numerous discrete, small to large pea-sized red, puffy edematous, excoriated papules, particularly on the extensor surfaces of the extremities. There were a number of excoriated areas from scratching. On the legs were numerous purpuric spots pin-head in size, and on the outer lower third of the left leg, was a palm-sized hemorrhagic area with a scaly surface. In the left inguinal region was a glandular mass the size of a man's fist. This mass was hard, non-tender and bound down to the underlying structures.

Liver and spleen not palpable.

Abdomen, heart, lungs, throat—negative.

Pupils equal and reacted well to light and accommodation.

Teeth—absent.

Blood pressure: 110/70.

Blood Wassermann and count—negative.

Sections of gland removed from the left groin showed a typical structure of lymphosarcoma.

X-ray treatments of the skin and glands, soothing baths, anti-pruritic lotions and ointment gave very little relief. The patient died two months later from a generalized sarcomatosis.

While the intense itching, and the urticaria-like papules and nodules, the purpura and glandular enlargement somewhat resembled lesions seen in Hodgkin's disease, the advanced age of the patient was against a diagnosis of that disease; the bright red color and the edematous appearance of the lesions contrasted with the indolent excoriated papules usually seen in Hodgkin's.

Case No. 5: Mr. W. K., white, aged 16, American, school boy, was admitted to the City Hospital on July 16, 1931, complain-



ing of swelling above the right eye and nodules over the skin of four months' duration. Past and family histories were negative. There was no history of injury, irritation nor removal of moles. The condition had begun as a small lump in the right axilla followed by a rapid increase of

Although there was no history of an initial growth, nor demonstrable origin of the lymphosarcoma, we were led to think of this disease because of the great number and large size of the subcutaneous and cutaneous nodules, their rapid multiplication and growth.

Lymphosarcoma, unlike the other members of the lymphoblastoma group, usually metastasizes early to the internal organs and bones and runs a comparatively rapid and a fatal course. I have never observed skin lesions in lymphosarcoma which in any way resembled either mycosis fungoides or leukemia cutis.

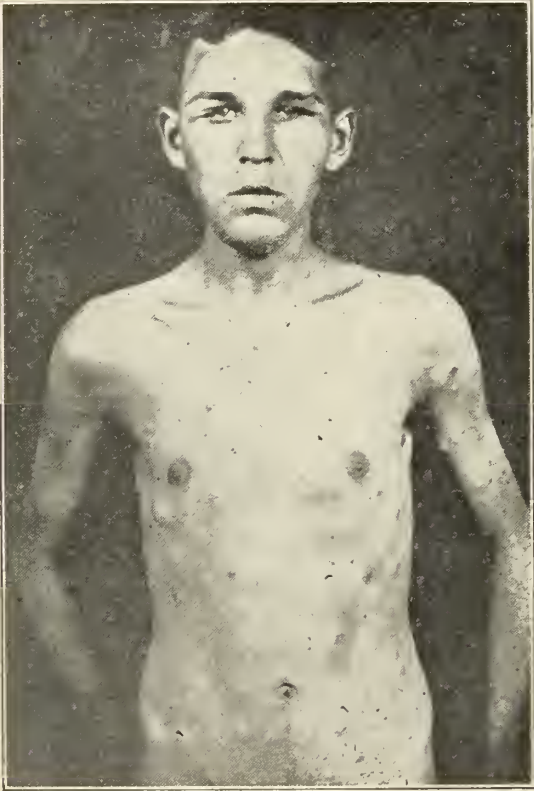
#### LYMPHATIC LEUKEMIA

The dermatologist is seldom consulted by patients with acute lymphatic leukemia. Because of the gravity of the symptoms in their constitutional character, such cases are usually seen by the internist, who is able to make the diagnosis from bleeding of the mucous membranes of the throat, gums and mouth; hemorrhages of the conjunctiva; and petechial hemorrhages in the flexor surfaces of the elbows, axillae and sometimes on the trunk. The large spleen furnishes another important sign, and the clinical diagnosis will be further confirmed by the characteristic blood picture.

Chronic lymphatic leukemia may first be suspected because of a generalized erythrodermia with dryness, scaling, redness, thickening and itching of the skin, accompanied by glandular enlargement; or, because of the thickened, wrinkled condition of the skin on the face, particularly the forehead and cheek. These cutaneous surfaces may be converted into large folds and grooves, resembling the convolutions of the brain. Again, there may be bluish or grayish colored papules or nodules over the skin accompanied by pruritis, usually not severe.

Not infrequently there are deep ulcerations of the skin somewhat resembling a gummatous process, and changes in the tongue.

While the cutaneous lesions in lymphatic leukemia may cause one to suspect the disease, and the pathology tend to confirm the diagnosis, it is impossible to prove the diagnosis during life, without the typical



Lymphosarcoma with cutaneous and subcutaneous nodules—Case 5.

similar and larger nodules over the body and extremities. He felt perfectly well.

Examination showed a well developed and nourished young man with large bulging over the right orbit and many pea to English walnut-sized hard, subcutaneous and cutaneous nodules over the skin. Some of the cutaneous tumors were of a bluish to brownish color. Moderate enlargement of all the superficial lymph nodes.

Lungs, heart, abdomen, throat, teeth and deep reflexes were apparently normal.

X-ray of mediastinal glands and long bones were negative.

Wassermann—negative.

Blood count, urine—normal.

Histological section showed lymphosarcoma.

blood picture, namely, a high increase in the total white cell count, and also a relative increase in lymphocytes, with varying types.

#### MYELOGENOUS LEUKEMIA

Still another type of leukemia which is sometimes seen by dermatologists because the patient consults him for an accompanying skin manifestation is myelogenous leukemia.



Myelogenous leukemia showing swelling and hemorrhage of gums—Case 6.

Case No. 6: Mrs. L., aged 45, white, American-Hebrew, housewife, consulted me on May 28, 1929, complaining of black and blue spots over the skin and bleeding of the gums of five days' duration. I had treated her several years previously for lupus erythematosus and since that time she had had no recurrence. Her personal and family histories were irrelevant. The present symptoms had begun as two half-dollar-sized blue lesions on the arm followed by others on the body, buttocks and extremities, and a bleeding sore condition around the right lower front teeth. She had been perfectly well except for nervousness and slight fatigue.

Examination showed a well developed and well nourished pale, white woman, extremely apprehensive and nervous. There were about 15 to 18 dime to silver dollar-sized deeply pigmented macular areas in the skin which did not blanch on pressure. Around the lower front teeth the gums were dark red, and swollen, and there was oozing of blood between gums and teeth. The spleen was palpable  $2\frac{1}{2}$  cms. below the



Same case showing circumscribed black and blue hemorrhagic spots on skin—Case 6.

left costal margin and the liver 3 cms. below the right costal margin; both were smooth and non-tender.

Heart, lungs, throat, teeth and deep reflexes were apparently normal.

Blood pressure: 110/80.

A blood count made immediately showed:

Hgb.	52%
RBC	2,530,000
WBC	3,600

The overwhelming majority of the white cells consisted of myelocytes and myeloblasts.

Because of the blood count and clinical findings, a diagnosis of myelogenous leu-



kemia was made. The patient was advised to consult her internist and go to the hospital immediately for blood transfusions and x-ray treatments.

Following are the reports of her various subsequent blood counts:

5-28-29  
Hgb. .... 52%  
RBC ..... 2,530,000  
WBC ..... 3,600  
Differential: Appearance of a myelogenous leukemia.

6-1-29  
Hgb. .... 49%  
RBC ..... 2,570,000  
WBC ..... 5,759

6-4-29  
Hgb. .... 49%  
RBC ..... 2,670,000  
WBC ..... 8,700  
Differential: Appearance as before.

6-7-29  
Hgb. .... 51%  
RBC ..... 2,770,000  
WBC ..... 10,150

As in the first count, the later reports likewise showed a predominance of myelocytes and myeloblasts.

A still later report (the last count taken) showed a total of 30,000 white cells, which, as in previous instances, consisted almost entirely of myelocytes and myeloblasts.

She grew rapidly worse, with increasingly numerous hemorrhages in the skin and mucous membranes of the mouth, more pronounced pallor, and shortness of breath. She died about six days after I saw her.

The sharply defined black and blue spots, the swollen and spongy bleeding gums, the enlarged spleen, the patient's pallor and her anxiety caused me to think that she had a leukemia, and while the total white blood cell count was comparatively low, the white blood cells were myelocytes, confirming our clinical opinion of a leukemia. It is interesting to observe the increase in the total blood count over the short time in which the patient was observed.

Another case of myelogenous leukemia with somewhat different lesions was that of a child.

Case No. 7: Master C. B., aged 3 years, was referred to me by his family doctor for a generalized itching eruption of 10 days' duration. Family and personal his-

tories were negative. The present illness had begun as a fine, measly rash over the body and fronts of the arms, the papules becoming larger and assuming a hive-like appearance. Some of the lesions became bluish tinged. New ones made their appearance while old ones remained. There was no itching, however, and he had seemed perfectly well until the morning on which I saw him when he had awakened with a sore throat, generalized malaise and a temperature of 100.6.

Examination showed a well developed and well nourished boy of three years with numerous papules and plaques most marked on the front of the body. The plaque-like lesions were purpuric while the papules were bright red in color, presenting a striking contrast. The throat was red, the tonsils were large, swollen and cryptic, and there were a few pea-sized red and hemorrhagic, eroded, raised lesions on the mucous membranes of the cheeks, beneath the sides of the tongue, and on the right tonsil. The spleen was palpable 2 cms. below the left costal region; the liver 2 cms. below the right. The condition suggested a diagnosis of streptococcic sore throat probably with blood stream infection.

I am indebted to Dr. Denzer for his observations on the clinical course of this patient and for the following blood counts, the latter being made by Dr. Rosenthal.

Jan. 9, 1929  
Hgb. .... 66%  
Normoblasts 1 per 100 WBC.  
RBC ..... 4,860,000  
Bleeding time 4 minutes.  
WBC ..... 36,000  
Coagulation time 12 minutes.  
Platelets ..... 20,000  
Tourniquet test—Negative.  
Polys. Young ..... 3%  
Clot retraction—Very slight—12 hours.  
Polys. Segmented ..... 27.5%  
Myelocytes Neut. .... 1.0%  
Myelocytes Bas. .... 0.5%  
Myeloblasts ..... 10.0  
Lymphocytes ..... 36.0  
Monocytes ..... 3.0

Jan. 31, 1929  
Hgb. .... 65%  
RBC ..... 3,800,000  
WBC ..... 90,000  
Platelets ..... 20,000  
Polys. Neut. .... 29.0%  
Polys. Baso. .... 0.6%  
Lymphocytes ..... 15.3  
Myelocytes Neut. .... 3.6

Myeloblasts .....	45.3
Monocytes .....	6.0
Feb. 16, 1929	
Hgb. ....	50%
RBC .....	3,260,000
WBC .....	62,000
Platelets .....	40,000
Polys. Neut. ....	50%
Polys. Bas. ....	1
Myelocytes, Neut. ....	19
Myelocytes, Bas. ....	2
Myeloblasts .....	11
Lymphocytes .....	13
Monocytes .....	4

Feb. 28, 1929	
Hgb. ....	35%
RBC .....	2,480,000
WBC .....	83,000
Platelets .....	15,000
Polys. Staff. ....	23%
Polys. Seg. ....	34%
Polys. Bas. ....	1
McN. ....	18
McB. ....	1
Myeloblasts .....	5
Lymphocytes .....	15
Monocytes .....	3
Normoblasts .....	1
per 100 white blood cells.	
Megaloblasts .....	2
per 100 white blood cells.	

In this case the very marked urticarial and erythema multiforme-like eruption with purpuric plaques preceded the constitutional symptoms of the disease by 10 days. The most significant cutaneous findings were the urticaria and erythema multiforme-like lesions without itching; the hemorrhages; and the sore throat with some purpuric and ulcerated lesions in the mucous membranes of the mouth. The enlarged spleen and the reports from the blood count made the diagnosis conclusive.

In spite of all treatment the child died in about seven weeks.

#### MYCOSIS FUNGOIDES

In the diseases of the lymphoblastoma group so far included in our discussion, the involvement of the lymphatic system is primary and may dominate the clinical picture while the skin manifestations are, so far as known, always secondary although frequently visible first in point of time. In the final member of our group now to be discussed, mycosis fungoides, these factors are reversed, the skin lesions invariably constituting the most striking and con-

stant manifestation, while any general or clinically demonstrable involvement of the lymphatic system is minimal and in little or no apparent relation to either the course, localization, or extent of the skin lesions.

From the view-point of the dermatologist, then, mycosis fungoides is by far the most interesting member of the group, and I am therefore reporting several selected cases in considerable detail.

Case No. 8: I saw Mrs. C., white, American, aged 37, in 1920, while I was associated with Dr. Fordyce. Her complaint was a persistent intensely itching so-called urticarial rash of 2 years' duration. Her past history and her family history were negative. The first symptom of her present illness was the itching; this was followed by the appearance of hive-like lumps on her arms and chest, after she had played golf in the hot sun. The itching continued and the lumps grew larger and remained. The patient felt perfectly well except for fatigue caused by loss of sleep due to the itching.

Examination showed a thin, pale woman, apparently not very ill. Over the cutaneous surface of the body and extremities, and especially the back and chest, were numerous pea to hazelnut-sized nodules, dark red erythema multiforme-like plaques and a few raised circinate lesions. The tumors were firm, freely movable with the skin and not tender. The skin was very dry and there were scattered, scaly, eczematized plaques. The patient was constantly scratching or rubbing her skin. There was no glandular enlargement. The mouth, throat, lungs, liver, spleen and abdomen were negative. Her blood pressure was 112/84.

Sections from one of the nodules showed a typical structure of the tumor stage of mycosis fungoides. The lesions continued to increase in numbers and in size, some finally developing into large tumors, many of which became ulcerated into fungating cauliflower-like masses with elevated or terraced borders and a serous discharge.

Yellow colored slough was to be found in some of the granular tumors. At one time, there were as many as 300 tumors, ranging from a pea to a small saucer in size. The ulcers were tender and very painful.



The patient lost in weight and in strength, grew even paler, suffered greatly from the itching, and became extremely melancholy.

We gave her roentgen-ray treatment; the doses varying from  $\frac{3}{4}$  to  $2\frac{1}{2}$  units of unfiltered x-ray to each tumor, depending on the size of the lesion. The radiation was pushed to the limit of tolerance.

It was found that when more than five or six tumors were treated at a sitting, the patient would become nauseated, extremely prostrated, and often develop a temperature of 102 to  $104\frac{1}{2}$  for 24 to 48 hours, necessitating, of course, a few days' rest. We also learned that if less than 1 to  $1\frac{1}{4}$  units of x-ray were given to a tumor the size of an English walnut, it would begin a mushroom-like growth and unless a second exposure were given immediately, its progress was uncontrollable. When an exposure of  $1\frac{1}{4}$  to  $2\frac{1}{2}$  units was given to a single tumor (the dose depending on the size), the lump would melt away within 2 to 3 weeks, leaving only a smooth, pinkish-red, surface. Seldom was it necessary to give a second exposure. We spent from one to two hours daily in radiating and dressing the ulcers and by our perseverance in that treatment all except a few small plaques and nodules had disappeared after about 5 months. We then gave the patient 7 injections of nearsphenamine in doses of 0.2 to 0.3 at five to seven day intervals—this for a tonic effect. We also prescribed cod-liver oil, iron, and a nutritious diet. The radiation was continued and finally all the lesions had cleared up, when one red, smooth tumor the size of a walnut appeared in front of the lobe of the right ear. To this lesion we gave 2 units of roentgen-ray and it disappeared. That was 11 years ago and the patient since has been free from symptoms, has gained 30 pounds in weight, and has been in excellent general health. Naturally, she has many areas of atrophy and telangiectasia from the roentgen-ray treatment, and the ulcerated lesions.

While I am confident that this most unusual success in the treatment of mycosis fungoides in the tumor stage can be attributed to the radiation, I feel equally certain that attention to the necessary dosage for each individual lesion, the persistency in

treatment though any cure seemed hopeless, the daily aseptic dressing of the wounds and the tonic—all were contributing factors in assuring her complete recovery.

\* \* \*

I have the records of two other cases of mycosis fungoides, both men, whom I treated first in Dr. Fordyce's office and later in my own. These differed from the case I have just described at length, in that they both had a generalized dermatitis with thickening of the skin, lichenified plaques and nodules, from a pea to a hazelnut in size, but never fungating tumors. These two cases were given the same treatment as the first case, and while one of the patients has a very extensive atrophy and telangiectasia of the skin, both have been free from lesions for  $6\frac{1}{2}$  years and 10 years, respectively.

Another case, resembling more closely the first case in its development of fungating tumors was of less happy outcome.

Case No. 9: Mr. D. C., aged 48, Italian, shoemaker, entered the City Hospital on October 5, 1931, complaining of itching of the skin and of nodules, of three years' duration. His family and personal history were negative. The present condition had begun with severe itching and an eczematized condition of the skin which had continued ever since. One year ago he first noticed lumps on his body, but it was not until three months ago that they became generalized. He felt perfectly well except for the itching and had not lost either weight or strength.

Examination showed a pale, thin, Italian constantly scratching his skin. Over the body and extremities were numerous bluish red papules and tumors, varying in size from a pea to 5 cms. in diameter. Many of the larger lesions were ulcerated, with a red, granular, fungating base and rolled edges. Some of the nodules were smooth, bluish-red in color, firm and non-tender on pressure. The skin between the nodules was thickened, dry, and scaly. Some of the ulcers had a sloughing, yellowish, green thick material between the granular masses. The superficial glands in the axillae were pea to hazelnut in size, firm and freely movable.



Mycosis fungoides in the tumor stage. Even with the numerous nodules and large fungating tumors, the patient appears well nourished and not gravely ill—Case 9.

*Physical examination:* Heart, lungs, abdomen, mouth and throat, deep and superficial reflexes appeared normal. Blood pressure 128/80.

*Blood Wassermann*—negative.

*Blood count:*

Young Polys. ....	25
Old Polys. ....	44
Lymph. ....	18
Eosin. ....	3
Mono. ....	5
Baso. ....	1

Stained smears from biopsy material showed many types of organisms.

Blood cultures showed *Staphylococcus albus* on three occasions.

Urine was negative.

X-rays of chest and long bones were negative.

Tissue culture showed *Staphylococcus albus* and hemolytic streptococcus. A gland removed from the right axilla showed only a simple, inflammatory tissue. No evidence of mycosis fungoides noted.

Sections of a tumor removed from the skin showed a characteristic picture of mycosis fungoides.

During the patient's 14-day stay in the hospital, he ran a temperature (septic) from 99 to 102. He became weaker and finally died of pneumonia.

*Diagnosis:* Mycosis fungoides.

\* \* \*

In 1921 I had under treatment four cases of mycosis fungoides all of whom gave a history of asthmatic or hay-fever attacks. Recalling that mycosis was known to be a disease with intense itching, with patches of so-called eczema, and urticaria-like lesions, I thought I should make an investigation of the disease from the standpoint of allergy. Working with Dr. George Mackenzie, on seven hospitalized cases, we made innumerable skin tests, tests of the stomach contents, examinations of the feces, made blood cultures and cultures from the skin tumors, and inoculated many animals with material from the skin tumors—all with negative results.

In stained sections of a non-ulcerating mycosis fungoides tumor, we demonstrated a diplococcic organism deep in the tissues, but we were never able to culture or reproduce it by animal inoculation. We treated several cases with large doses of typhoid vaccine intravenously, and although the patients reacted with severe chills and high fever, they showed no benefit from the inoculation.

A great many physicians agree with Dr. Symmers who, in a recent article (Arch. Dermat. & Syph. 25:1, Jan. 1932), concludes: "It seems to me that postmortem and histologic observations show that mycosis fungoides is the cutaneous expression of at least three different diseases of the lymph node system: Hodgkin's disease; a variety of round cell sarcoma arising from the connective tissue reticulum of lymph nodes or elsewhere, and lymphosarcoma, originating in the lymphoid cells of the lymph nodes or of other lymphoid structures—in short, that mycosis fungoides as an independent form of disease does not exist."

When I review my clinical and pathological observations in mycosis fungoides, I find it difficult to arrive at the same conclusion.



I have seen a number of cases of this disease begin as a generalized, exfoliative dermatitis with pronounced itching of the skin followed by nodules and tumors; I have seen others begin and remain as localized, dry, scaling patches of eczema for as long as 11 years, then develop characteristic mycosis fungoides tumors; I know still other cases where there has been an initial fungated tumor followed by many similar lesions—and all lesions irrespective of stages have showed a picture comparable to that found in mycosis fungoides and all have run a course perfectly typical of that disease. This has been usually without glandular enlargement except in the later stages of the disease and where the enlarged glands could be explained by sepsis from the ulcerating tumor, the glands having the pathology of a simple inflammatory process (rarely with enlargement of the liver or spleen). The patients have remained comparatively well except for symptoms of severe itching.

Where one follows carefully the clinical and pathological course of a case of mycosis fungoides through its various stages over a period of a few months or years, I believe it is difficult to confuse it with any other known disease.

A great many physicians who have a patient with thickening of the skin and other symptoms found in diseases of the lymphoblastoma group are sometimes convinced that the cases are definitely one of the four we have just been discussing. While it is always the cautious thing to consider such a diagnosis, in nine cases out of ten, it is probably a simple exfoliative dermatitis. We are aware of the fact that every long standing case of generalized dermatitis develops a thickened skin with non-specific adenopathy.

I have seen many cases of generalized exfoliative dermatitis with thickening of the skin, intense itching and formation of papules and thickened plaques, enlargement of all the superficial lymph glands, a white blood count either normal or moderately increased, and with indefinite pathological findings in the examined specimens of the skin. Where these cases have been shown before a group of dermatologists they have almost invariably suggested mycosis fungoides, leukemia or Hodgkin's disease.

Where some of these patients have died from some intercurrent disease the pathological report has usually been that of a simple inflammatory condition, or else indefinite. I presented such a case several years ago before the New York Academy of Medicine. This patient had seen not only most of the dermatologists in New York but several in other cities and almost invariably the diagnosis had been one or another of the diseases included in the lymphoblastoma group. His tissue, blood and urine showed large contents of arsenic. He was given sodium thiosulphate and was sent to a warmer climate where he entirely recovered and has remained well for several years. This man evidently had an arsenical dermatitis. I know of several other cases that have recovered where no specific cause of the symptom complex was ever determined. In this connection, it is interesting to recall the case of a young woman, aged 30, referred to me by a surgeon in December 1928, with a diagnosis of epithelioma. On the right nostril she had a dime-sized, smooth, red, elevated, round, firm tumor with a few dilated blood vessels. This was of one month's duration. Clinically, the lesion more nearly resembled a sarcoid type of tuberculosis or possibly a mixed glandular type of epithelioma. The growth was removed and sections submitted to several of our leading pathologists were diagnosed as lymphoblastoma. The patient, however, has remained perfectly well since.

On the other hand, we all see patients with circumscribed, eczematized patches diagnosed as seborrheic dermatitis, parapsoriasis, or eczema who, after a few years, develop symptoms and tumors characteristic of mycosis fungoides. I think that one can say with a degree of certainty that a case was just as truly one of mycosis fungoides when first seen with the eczematoid areas as it was a few years later when the final diagnosis was established.

Similar mistakes may occur in connection with other members of the lymphoblastoma group; thus only a few days ago, a woman, aged 56, was referred to me by her doctor with an intensely itching, nodular condition of the skin that was thought to be scabies in the summer of 1931. She presented only about a dozen large pea to

five cent-sized bluish-red, smooth, cutaneous nodules which on histologic study showed the picture found in Hodgkin's disease.

It is only by observing such cases over a long period of time, and doing frequent blood counts as well as tissue examinations, that we are able to establish the true diagnosis.

In conclusion then, I would stress the advantages to be gained by (1) an early recognition of certain skin manifestations characteristic of the lymphoblastoma group of diseases, and often appearing long before the symptoms of lymphatic involvement; (2) bearing in mind the possibility of primary lymphatic disease when confronted by the more common inflammatory conditions such as an exfoliative dermatitis; and (3) supplementing clinical observation with frequent blood counts, tissue examinations, and x-rays of internal organs.

We have already been able to achieve some encouraging results in the treatment of these hitherto almost uniformly fatal diseases. It is to be hoped that further careful study of individual cases will ultimately lead to definite establishment of the cause and with it the induction of a truly rational therapy.

## THE ROLE OF CALCIUM AND PHOSPHORUS IN THE PREVENTION AND CURE OF RICKETS\*

By

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Rickets, as a clinical entity, had its birth during the period of Aristotle. In success-

ive centuries, various theories have been advanced as to the causative factors of this common condition of childhood. Deductions based principally on clinical findings have been made in the past, and finally, scientists of the twentieth century are accredited with the distinction of, at least, having solved the various etiologic factors, as well as having deduced methods from which serologic interpretations and radiologic examinations could be made with accuracy. There is, perhaps, no other clinical entity in medicine that has been subjected to an evolution as has this metabolic disease.

This presentation is a resume of a series of intensive observations that have been carried on since April 1929. The subject matter has been presented to the profession at large in a group of six papers.<sup>1, 2, 3, 4, 5, 6</sup> I am indeed grateful to Drs. E. C. Samuel<sup>12</sup>, E. R. Bowie<sup>13</sup>, J. A. Lanford<sup>14</sup>, and A. V. Friedrichs<sup>15</sup> for the splendid co-operation they have given me in this study. These contributions include both animal experimentations<sup>16, 17, 15, 19</sup> and human observations.

Dicalcium phosphate has been known since 1859, though information regarding its usage in the human being is wanting. Confirmatory deductions by me would seem to indicate that our difficulties in the future, both with respect to the prevention and to the cure of rickets, will be oviated by complementing this salt with fortified cod liver oil. Year by year, there has been an increasing demand for calcium salts. Magazines—both lay and professional—have graced their columns with a profusion of interesting articles relating to inorganic salt deficiency. McCollum<sup>7</sup> (1932) has emphasized the paucity of these salts in our daily diet, stating “. . . Until recently I believed we were getting enough phosphorus but too little calcium. Now I am convinced that we need more of both these substances. Also, we need an adequate amount of the ‘sunshine’ vitamin D to enable the body to use the calcium and phosphorus which our foods furnish. . . . A great deal can be done by eating more and more of the ‘protective foods’—milk, green vegetables, and fruits. A simple way to supplement a diet poor in minerals is to take two level teaspoons of dicalcium phos-

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phate each day. *This will furnish about the same amount of calcium and phosphorus as a quart of milk and should be taken in addition to the regular diet.* It is a practically tasteless powder and can be mixed with mashed potatoes, cereals, buttermilk, orange juice, or water. And be sure to get plenty of vitamin D from sunshine, cod liver oil, or other sources."

Discouraging and unsuccessful trials have attended the use of many salts of calcium that have been advocated for human consumption. Textbooks of pharmacology have omitted dicalcium phosphate entirely and have made only negative mention of tricalcium phosphate. Added clarification, indications for its usage and successful utilization have proven the superiority of dicalcium phosphate and this statement is made without any reservations whatsoever. Lest we forget—dicalcium phosphate is found in the milk of practically all mammals; this salt has the same ratio of calcium and phosphorus and of calcium oxide and phosphorus pentoxide as is found in cow's milk.

If digression is permissible, a few salient and interesting points will now be stressed: 1. "The difference in percentages in human and cow's milk is equalized by the body using only what is essential for life and growth and not attempting to use it at all." This fact has been substantiated in my human serologic examinations, as a hypercalcemia or a hyperphosphemia did not occur in a single instance. 2. "Life does not so much depend upon the ion as upon its chemical combination. Therefore ash alone will not supply the needs." (Hess)<sup>8</sup> 3. Functions of calcium: —a. formation of bones—in newly born—75% of ash is calcium and phosphate and constitutes 1.5% of the body, nearly three pounds in the adult man, of which 99% is present in the bones; b. present in every normal cell—for cell functioning; c. adjusts action of bowel; d. regulator of the blood and presumably also for acid base equilibria, facilitating as well the coagulation of shed blood; e. it is a functional ion in muscle contractility and stimulates the heart exerting a tonic influence on the vagus nerve; f. intravenously inhibits pleural effusion; g. stimulates the constrictor of the pupils; h. aids in digestion

and in every step in metabolism, from absorption to excretion and secretion; i. modifies the permeability of cells and of capillaries; j. favors the passage of water from tissues into blood acting in the opposite way to sodium. We can then readily understand the importance of supplying the body with the necessary amount and in the right combination.

As there is a definite relationship between calcium and phosphorus metabolism, it is necessary to know just what part phosphorus plays in the human anatomy. This element is a constituent of all cells, particularly those of bone, muscle, gland and nerve, and facilitates the neutrality of the body fluid as well as the rate of oxidation of carbohydrates. Phosphorus is present in combination in every tissue of the body. Williams<sup>10</sup> (1931) states "calcium cannot be utilized unless phosphate is also available in suitable quantities . . . phosphorus metabolism is closely related to calcium metabolism. *While phosphate occurs in food materials in many forms, the only form that is absorbed by the intestines and is utilized, in so far as is known, is inorganic phosphate.*" Therefore, if the inferences above are correct, the desirable method of administering calcium and phosphorus is in the form of a calcium phosphate. For many reasons, monocalcium phosphate and tricalcium phosphate are not substitutes for dicalcium phosphate. We must now necessarily appreciate the importance of infant feeding and its direct relation to inorganic salts. A more comprehensive knowledge of the constituents of the foods supplying daily wants is stressed most emphatically. The infant depends principally on milk—and in Tables 1 and 2 calcium and phosphorus contents are given. It is granted that one quart of milk can supply one gram of calcium and one and one-half grams of phosphorus and in turn shall be sufficient to furnish the required 24-hour intake. Is this statement true? or is it a debatable issue? From a personal view-point I do not believe that the average quart of milk supplies the necessary ingredients and neither do I accept that were the calcium and phosphorus in the proper ratio and amount that this would be sufficient to furnish the body with the quantity of dicalcium phosphate

Table 1  
CALCIUM CONTENT OF FOODS  
(Kugelmass)  
(Mgms. %)

Cheese .....	931
Soy beans .....	310
Almonds .....	239
Molasses .....	211
Water cress .....	186
Figs, dry .....	170
Chard .....	165
Beans, dried .....	160
Egg yolks, boiled .....	137
Brown bread .....	130
Cauliflower .....	120
Olives .....	120
Milk .....	120
Endive .....	104
Walnuts .....	89
Peanuts .....	71
Eggs .....	67
Turnips .....	64
Carrots .....	56
Prunes, dried .....	54
Cabbage .....	45
Wheat, whole .....	45
Oranges .....	45
Beets .....	29
White flour .....	20
Potatoes .....	14
Beef, lean .....	12
Rice, polished .....	9

Table 2  
PHOSPHORUS CONTENT OF FOODS  
(Kugelmass)  
(Mgms. %)

Cheese .....	683
Egg yolk .....	524
Beans, dried .....	471
Almonds .....	465
Wheat, whole .....	423
Peanuts .....	399
Oatmeal .....	392
Walnuts .....	357
Beef, lean .....	218
Eggs .....	180
Prunes, dried .....	105
Rice, polished .....	96
Milk .....	93
Flour, white .....	92
Potatoes .....	58
Carrots .....	46
Turnips .....	46
Beets .....	39
Bananas .....	31
Oranges .....	16
Apples .....	12

needed during the period of 24 hours. Recent chemical examinations of commission milk in New Orleans reveal not only incorrect ratios, but also inorganic deficiencies. Controlled cows, having dicalcium phosphate added to their daily ration, produced

milk having proper ratios. From Charts 1 and 2, one can gather that more attention should be expended in the proper feeding of cows and increased interest manifested in the inorganic salts of milk—in keeping with checking of bacteria, total solids, etc. This would remove at least one of the probable sources for the incidence of rickets, not only in our city, but elsewhere.

Weston<sup>11</sup>, (1931) always interested in the inorganic content of food, states "calcium and phosphorus have been studied over a longer period of time and until recently more intensively than have any of the essential mineral elements. The same striking variations are found in different samples of milk analyzed as occur with iron and iodine. . . . It is our observation that in those localities in which are found a high calcium and phosphorus content of milk, growth appears to be stimulated and when adult life is reached the stature is much above the average and rickets is comparatively rare. It is a hopeful sign, however—to note that outstanding companies are engaged in the processing of milk with the thought to produce milk that will naturally contain in sufficient amounts those elements that are known to be essential in supplying the requirements of nutrition."

I shall now present to you a complete series of charts, statistics, radiologic findings and deductions substantiating my contention that dicalcium phosphate can prevent and cure rickets in the human being and in allied diseases in animals without the aid of vitamin D. Realization of the various disappointments many of us have had, not to speak of the numerous embarrassments that have come to physicians who found that their efforts toward preventing and curing this disease had been of no avail, even though necessary measures were instituted at the proper time and with the proper amounts of cod liver oil, has been the incentive for additional investigation to learn of our shortcomings. Cod liver oil, vitamin D, cod liver oil concentrates, proper food, ultra-violet—all have failed at times—these were failures just the same. Argument is unnecessary in so far as affirming just what has been accomplished by the use of any one of the former or in combination. The successful cases are not the basis of my discussion.



Chart No. 1  
\*Averages and Ratios  
Calcium and Phosphorus in Commission Milk.  
New Orleans, La.

	P <sub>2</sub> O <sub>5</sub>		CaO		Ratio	P		Ca		Ratio
	Grams per Quart	Grains per Quart	Grams per Quart	Grains per Quart	P.O.	Grams per Quart	Grains per Quart	Grams per Quart	Grains per Quart	P
					CaO					Ca.
A.	1.067	16.5	1.130	17.5	.944:1	.465	7.20	.809	12.48	.577:1
B.	1.062	16.4	1.133	17.5	.937:1	.464	7.15	.811	12.51	.571:1
C.	1.085	16.7	1.315	20.30	.825:1	.473	7.29	.941	14.52	.501:1
D.	1.082	16.7	1.320	20.40	.822:1	.472	7.29	.945	14.56	.500:1
E.	{ 2.000	31.0 }	1.650	25.5	1.22: 1	.873	13.5	1.180	18.24	.740:1
	{ CONTROL }									
F.	2.045	31.6	1.590	24.7	1.29: 1	.893	13.8	1.136	17.65	.781:1

- A. Farm No. 1 Pure Bred Jersey Herd
- B. Farm No. 2 Grade Jersey Herd
- C. Farm No. 3 Jersey and Holstein Herd
- D. Farm No. 4 Jersey and Holstein Herd
- \*\*E. Weeks Jersey Herd (Control)
- F. Calculated from Majonnier and Troy

Chart No. 2  
Calculations of Ca and P in Commission Milk  
Dairies of New Orleans, La.

Sample	CaO	Avg. CaO	P.O. <sub>2</sub>	Avg. P.O. <sub>2</sub>	Ratio P.O. <sub>2</sub>	Ratio P
					CaO	Ca
Farm No. 1 Pure Bred Jersey Herd						
No. 1	.1191		.1121			
No. 2	.118		.1126			
No. 3	.1187		.113			
No. 4	.1192		.1125			
No. 5	.121	.1192	.1131	.1127	.945	.576
Farm No. 2 Grade Jersey Herd						
No. 1	.1202		.1126			
No. 2	.1193		.1117			
No. 3	.120		.1124			
No. 4	.1195		.1121			
No. 5	.1198	.1196	.1116	.1121	.940	.572
Farm No. 3 Jersey and Holstein Herd						
No. 1	.1391		.114			
No. 2	.1385		.1151			
No. 3	.1392		.1146			
No. 4	.1394		.1142			
No. 5	.1389	.1390	.1139	.1144	.825	.504
Farm No. 4 Jersey and Holstein Herd						
No. 1	.138		.1137			
No. 2	.1392		.1141			
No. 3	.1395		.114			
No. 4	.1392		.1143			
No. 5	.1392	.1392	.1145	.1141	.820	.500
Weeks Dairy	.179		.218			
	.173		.207			
	.166	.174	.208	.211	1.22	.743

I am keenly interested in knowing just why it has been that so many failures have attended our cases. One might inquire, is rickets on the decline? In answer to this inquiry, my reply is assuredly no, though admission is made that the type we are noting is not as marked, nor near so physically impressive as it was years ago. Through limitation of time, I believe that our shortcomings in the treatment of rickets has been due to: 1. our disinterest in the inorganic salts of milk; 2. our disregard of a possible achlorhydia; 3. our over anxiousness in attempting to give to the body something to mobilize salts when, as a matter of fact, there is an absolute paucity of these ingredients. In conclusion, I trust that after you will have witnessed the results of my study your interest will be aroused in the wanting element which, in the past, has been overlooked and is now added to the preventive factors. In the future, dicalcium phosphate, as such, or in conjunction with fortified cod liver oil, will be given to children, limiting failures in the prevention of rickets and restoring normalcy in bone structure to those who have developed it.

DEDUCTIONS

- 1. Examination of milk used for human consumption exhibits deficiency of inorganic ingredients and incorrect ratios.
- 2. Dicalcium phosphate has been used successfully in feeding animals increasing

\*Computed for Dr. C. J. Bloom by H. N. Heffernan, Bacteriologist and Milk Inspector, N. O. Pure Milk Society, months Oct., Nov., and Dec. 1931.

\*\*Control—by E. Wander, Chemist, Weeks Island, La.

- both inorganic salts and adjusting proper ratios.
3. Dicalcium phosphate has prevented and cured allied rachitic diseases in animals.
  4. Dicalcium phosphate has prevented and cured rickets in children without the aid of vitamin D.
  5. Dicalcium phosphate can be used successfully in diseases where there are deficiencies of these respective elements.
  6. Dicalcium phosphate, when added to the diet of infants and children, will complete the rachitic prophylactic trinity—inorganic salt, vitamins, sunshine.

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## ACKNOWLEDGMENT FOR CO-OPERATION

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## ANIMAL EXPERIMENTATION

16. Rats: Food Research Lab., Inc. Received April 17, 1930.

17. Sheep: Ranch, J. B. Moore, Del Rio, Texas. Received Dec. 1930.

18. Horses: Headquarters Troop, 1st Cavalry Division, Fort Bliss, Texas. Received August 5, 1931.

19. Chickens: Research Department, Mead Johnson & Co., Evansville, Ind. Received July 1931.

## THE CLINICAL ASPECTS OF HAY-FEVER AND ASTHMA\*

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Foreword: This paper undertakes to bring up the clinical aspects of allergic hay-fever and asthma in keeping with the great recent advance in the field of allergy—an endeavor to formulate the clinical approach which it is trusted may be of use when supplemented by the new technical allergic testing with antigens.

Asthma and hay-fever are among the most prevalent chronic diseases which physicians encounter, particularly in our section of the country where the climate offers ideal conditions for abundant plant life and prolonged pollen seasons. In the past, these diseases have proven most rebellious to treatment. Consequently, in view of the complexity of these allergic phenomena, physicians have in general resorted to palliative measures which have often proved harmful and never curative.

Today, scientific investigation in the field of allergy has carried forward our knowledge of the intimate nature of such pathologic phenomena. Hay-fever and asthma should now present few cases in which a careful systematic history, combined with clinical study and appropriate allergic testing, can fail to determine the offending antigens in these diseases, and clearly guide us in their management.

My personal experience as a victim of both hay-fever and asthma, from early infancy to adolescence, has always centered

\*Read before the Association, in annual session, Mobile, April 19, 1932.



my interest in those allergic conditions since I became a student of medicine. Later, this interest was to be even more keen when, after 30 years of freedom from these afflictions, I unwittingly exposed myself to plant pollens during a visit to the mountains. This exposure was particularly intense; I remember that with my children, we used to identify the wild flowers by smelling them. Both my little daughter of 3 years and I developed hay-fever, followed later by asthma. My health rapidly deteriorated to the point of being gravely menaced. I developed multiple sensitizations, first to ragweed and grass pollens, then to bronchial infection, and later, in the spring, to oak pollen. A year later, I gave positive allergic skin tests to eight common foods and also to dog hair. My little daughter successively developed ragweed sensitization, bronchial infection sensitization, and a year later malarial infection sensitization with sudden and violent attacks of asthma truly alarming in their severity.

On account of this personal and intimate conflict with these allergic diseases which gravely menaced my health but which was fortunately followed by complete recovery, and also because of an extensive experience with allergic cases in my practice, I have frequently been urged by my friends throughout the State to prepare a paper on the subject of hay-fever and asthma. In that which is to follow, I do not wish to appear as one speaking to allergists, or to those who, like myself, have given special attention to this new department of internal medicine. The message I bring is from one who was once a victim of hay-fever and asthma; it is therefore prompted by a natural and deep felt sympathy for those who suffer from these diseases.

This paper shall take into consideration:

1st.—The definitions of allergic phenomena.

2nd.—A clinical classification from the point of view of diagnosis.

3rd.—The *modus operandi* of multiple sensitizations resulting from progressively deficient defensive reaction following the primary sensitization.

4th.—The relative importance of secondary respiratory infection-sensitiza-

tion in all cases of asthma and hay-fever.

5th.—The necessity of an intensive study of the atmospheric pollutions in the patient's environment.

6th.—The general principles of treatment.

7th.—The practical approach toward a better understanding of these diseases.

8th.—And, in conclusion, support of the optimistic views expressed by authorities in allergy as to the modern methods at our command.

\* \* \*

1st. Definitions of the allergic phenomena.

The exceptional character of hay-fever and asthma is naturally to be approached only through a knowledge of allergy. First of all, the allergic reaction may be illustrated by those visible cutaneous reactions resulting from contact with the green stinging nettle-plant of the woods or with the aquatic stinging-nettle so often encountered in salt water bathing. We are all perfectly familiar with these cutaneous reactions.

In hay-fever and asthma, however, these local reactions are due to particles of the excitant substance, to which the patient is sensitized, coming in contact with the fixed tissue cells of the conjunctiva and nasopharynx in hay-fever, and with the bronchial surface cells in asthma. Such reactions account for the burning, swelling and lacrimation in hay-fever, and the allergic processes resulting in bronchial spasms in asthma, which are followed by partial occlusion of the bronchioles with viscid mucus, products of the allergic reaction. In severe cases of asthma, the tonic muscular contractions extend from the voluntary to the involuntary muscles, the diaphragm, the intercostals, and the secondary respiratory muscles. The difficult and impeded respiratory efforts increase the intrathoracic pressure, and the large venous channels above the diaphragm are compressed. The right heart is thus overworked, first by the resistance in the alveolar interstices of the pulmonary tissue, and second on account of incomplete cardiac intake during ventricular diastole since the venous flow towards the heart is diminished. Dyspnea and partial asphyxia are thus responsible

for the great distress during the asthmatic paroxysms.

Quoting from Dr. Francis Rackeman before the Association for the Study of Allergy, June 1930, we have the immunologists' explanation of allergic phenomena:

"The term allergy was first used by Pirquet to describe the reaction capacity of actively sensitized animals. Later, the term was applied to those human individuals who by virtue of some fundamental and, perhaps, inherited quality, appeared to be "naturally" sensitive. Further study has shown that men can be sensitized actively not only through the respiratory and gastro-intestinal tracts, but through the placenta as well. It is proper to assume that hypersensitiveness is acquired in most cases and probably in all. When the allergic individual comes into contact with the specific substance, a reaction takes place with symptoms which are violent. *These symptoms depend on the presence of fixed cellular antibodies which react with the antigen on the cell surface to bring about a liberation of those histamine-like substances which the cell contains.*"

If one reviews the subject of allergy as found in medical literature, it will be found that all approaches to diagnosis are through exhaustive technical tests including some 400 food tests and an equal number of atmospheric antigens, pollens, bacterial and other organic substances. There is no wonder, therefore, that the average patient and his doctor should view the as-

pects of diagnosis and of desensitization procedures with considerable misgiving. The research worker's extensive survey of the positive and negative details in regard to hypersensitization diseases is correct from the technical point of view. But it is superabundant, vast and hopelessly complicated for the clinician who should confine himself to the facts in an individual case. The clinician should first employ his clinical art, and afterwards confirm his conclusions with skin tests with those antigens which his deductions lead him to suspect.

## 2nd. Classification of allergic hay-fever and asthma.

It is one of the main objects of this paper to propose a division of hay-fever and asthma syndromes according to origin and according to the symptoms due to the tissues traversed by the antigens before the allergic reactions take place, in the fixed tissue cells which have first been exposed to them and which have first become sensitized. There are four divisions:

- (1) Respiratory cases
- (2) Alimentary cases
- (3) Intrinsic or infectious cases
- (4) Combined or multiple cases.

### 1. Classification from the Point of View of the Offending Antigens

1. Respiratory cases	2. Alimentary cases	3. Intrinsic cases.
A	A	A
Plant pollens; these constitute 98% of hay-fever cases, of which 20% are estimated to result in asthma; 80% to 85% of pollen cases in this section of country are ragweed sensitization.	All ingesta, including foods, drugs, etc.	Focal infections.
B	B	B
Animal keratins, animal furs, feathers in beddings, upholstering, etc.	Protein-split products either formed in the digestive tract from faulty digestion or from bacterial breaking up of the foods before or after ingestion.	General infections, malarial infection, quite a frequent secondary sensitization development in this section of country.
C	C	
Face powders, insect powders, dust of wheat or other grain, fungi from musty wood or furnishings, etc.	Bacterial infection in the digestive system.	
	D	
	Intestinal parasites.	



II. Classification from the Point of View of Differential Diagnosis

1. Respiratory cases	2. Alimentary cases	3. Intrinsic cases.
Reactions confined to or much more prominent in the respiratory tract. This, invariably true at inception or before the original sensitization, is followed by other sensitizations, therefore an early history of symptoms important.	Symptoms of allergic reactions more prominent in the digestive system. Also more common on general skin surface, genito-urinary irritation or other allergic evidences, especially in the inception stage.	Focal infections. These lack the alimentary symptoms. They lack suddenness and violence, are more continuous. Malarial cases. These have the sharp and violent onset. May be suspected from history of malaria. Diagnosed by a palpable spleen which changes in tension from day to day, by stippling of red cells; by other blood changes, and often by discovery of the parasite, by the Bass-John concentration method.

Further Differential Indications

1. Period of paroxysms coincides with and recurs with pollen seasons. 2. Seizures follow certain atmospheric pollutions catalogued. 3. A change of quarters would enable differentiation between room dust and a general atmospheric cause. 4. Allergic testing with suspected antigens very dependable in this type.	1. Abrupt beginning, non-seasonal, unassociated with a new atmospheric pollution. 2. Following some unusual food which itself may be seasonal. 3. Test by elimination diet and retest by produced attack in giving the offending food. 4. In parasitic cases finding the ova in the stool. 5. Skin testing helpful but unreliable without diet testing to support.	1. Preceding disturbance of health, discovery of focal infection point. 2. Irrespective of season, or food, or unusual atmospheric cause. 3. Note that an Italian authority on malaria reports 60% of malarial children will show irregular skin rash.
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3rd. Combined or multiple cases.

The mode of development of multiple sensitizations resulting from progressively failing defensive reaction after the primary sensitization.

My experience has convinced me that the development of multiple sensitizations is the result of a depletion of defensive reaction against foreign proteins entering the system in the susceptible subjects. This conception seems to justify the view that only those allergens which are observed clinically to cause the most violent seizures, together with the primary allergen in the case, would be important in the desensitization of the individual, and the less responsible allergens should be temporarily avoided while the resistance to the active allergens is becoming artificially established.

Furthermore, it should be pointed out that while desensitization may remove the allergic burdens, it does not necessarily eradicate the previous infection pathology, or the damage which may be more or less permanent in the bronchiectasis, the bronchitis, and some degree of chronic emphysema which persists after a long standing and severe asthma. Therefore in every severe and long standing asthma the bacte-

rial sensitization needs to be continued at longer intervals, as recommended in the maintenance of desensitization by the perennial method against the recurrence in pollenosis cases.

4th. The relative importance of secondary respiratory infection-sensitization in all cases of asthma and hay-fever.

If there is any point in this paper of outstanding importance in the clinical interpretation for correct analysis of the severe and confirmed asthmatic cases of multiple sensitizations, it is that *the bacterial infection-sensitization in the respiratory tract becomes the dominant factor*. It is readily understood that such local causative factor is more constant and persistent, as well as it is an added burden to the vitality and the defensive resource of the patient. This development was true in my own person.

Also, because of the significance of this view-point in the correct management of the condition, I would point out that in the allergic seizures, as in migraine as well as in ordinary urticaria due to alimentary allergens, the exudates occur in tissues so

situated as to be secure against such bacterial invasion; whereas, in such cases as infantile eczema and in moist or weeping eczema of the external auditory canal, caused by a primary alimentary allergen, there *does* result such a parallel secondary sensitization to the consequent staphylococcus infection, and here again the secondary sensitization becomes *the dominant factor*, because it is constant, and often is persistent after the offending food is withdrawn.

5th. The necessity of a careful study of the atmospheric conditions.

In view of the fact that such a large proportion of cases are primarily due to atmospheric pollutions, including climate or general, neighborhood or local pollutions and particularly room-air impurities, I should like to emphasize the necessity of not only a general knowledge of air conditions, but also a thorough study of local conditions. It is evident, therefore, that the entire profession should be enlisted in this work for the correct analysis of allergic cases.

6th. General principles of treatment.

As the subject of treatment is extensive in its detail, and since excellent guides are available, only the general principles of treatment will be touched upon. The measures of meeting the indications after determination of the cause or causes consist in (1) the avoidance of the cause when possible; and (2) in the gradual artificial desensitization of the patient when this avoidance is impossible. The realization of these two aims is comparatively simple in the majority of cases, during freedom from exposure to the offending substance. During the period of exposure, it is correspondingly difficult.

As each patient is an individual study, the speed of advancing the desensitization procedure naturally varies greatly with the degree of sensitiveness in different subjects. Severe cases, in which the patient is exhausted in his resources and power of defense, may require much time and patience. The multiple sensitization cases demand guarding until there is manifest progress in the defensiveness. Temporarily, this may require an air-filtered chamber in which the patient is confined while the outside atmosphere density of the aller-

gens is excessive, or until the patient's response to desensitization procedures has advanced. In this locality, it would be advisable to provide a purified air during sudden changes of winds from inshore when clouds of pollen granules increase the burden to pollen sensitiveness. Air-filtering devices are now on the market and may be procured at reasonable expense.

7th. Authoritative support of the optimistic views of the newer methods.

At the Ninth Annual Meeting of the Association for the Study of Allergy, held in Philadelphia, June 8 and 9, 1931, Dr. Crafton Tyler Brown, Washington, D. C., stated:

"Provided extracts of the causative pollens are used, the results in the treatment of seasonal hay-fever or pollen asthma are directly proportional to the size of the maximum dose attained before season. By gradually working up to large enough pre-seasonal doses, namely, from 60,000 to 100,000 pollen units, failures are eliminated from hay-fever therapy, and perfect results are practically assured. To administer such strong doses, it is necessary to give up to 1 cc. of 6 to 10% pollen extracts. Although these doses are much larger than are being used by other workers in the field of allergy, my extensive use of them indicates that they may be given with perfect safety and comfort, provided sufficient care and judgment are used in regulating the preliminary increases in dosage in the individual patient. Furthermore, the evidence at hand would seem to indicate that the administration of such massive doses leads to complete and permanent desensitization with a disappearance of positive skin reactions."

Such massive doses, however, have been vigorously protested by other allergists. Coca and Durham whose authority is unquestioned in this field have written me concerning this form of treatment and have expressed the opinion that perennial treatment (treatment throughout the year at longer intervals than the pre-seasonal treatment) would meet general approval more than these huge doses. For my part, I have never taken or administered a larger dose than 3,000 units at the highest point in the scale of treatment. I have always advised desensitization at longer intervals throughout the pollen season.

Referring to pollenosis cases, Dr. I. Chandler Walker states:

"By co-ordination of sensitization tests of each individual patient with treatment with extracts of the specific pollen to which he reacts and in



strength adapted to his degree of sensitization, excellent results are obtained."

Referring to asthma, the same authority states:

"The asthmatic attacks during the season (pollen season) are caused by the same pollens that cause hay-fever and are relieved by the same treatment.

"Some writers claim that pollen asthma is easier to relieve and gives more certain results from pollen treatment than does hay-fever. Patients who have pollen hay-fever and asthma are almost always relieved of the asthmatic symptoms by the prevention treatment, even when they have sneezing and lacrimation on the days when the heaviest loads of pollen are in the air. Attacks of asthma which occur at the end of the hay-fever season and persist into the fall and winter after pollenation has stopped are caused by bacterial infection of the irritated mucous membranes and should be treated by vaccines."

I. C. Walker of Boston, W. S. Thomas of New York, and other allergists, insist that the choice of the bacterial antigen would be the one or ones which give allergic response in the skin test, and they also are in general agreement that the stock vaccines are just as satisfactory, with such control as to the choice, as are the autogenous strains.

In asthma from other than pollenosis, I. Chandler Walker states that only 50% of asthmatics are sensitive to any foreign protein as judged by the skin test. He treated 150 of those not sensitive with a vaccine made from the predominant organism in the sputum with relief of 40% and improvement in 20%. These cases seem to be the ones that defied analysis as to the specific cause, so that such cases, it would seem, should nevertheless be treated by vaccine therapy.

Coke, another leading allergist, affirms that "half the cases of asthma can be proved to be due to some foreign protein. If these causes can be removed, the patients are relieved of their asthma at once. Much can be done to relieve or cure other cases which do not give positive skin reactions by the use of the various protein antigens for the purpose of desensitization."

Rackeman also concludes that in asthma produced from a focus of bacterial growth within the body, or intrinsic asthma, vaccines produce a positive skin test and their action is then specific.

The choice of proteins for desensitization in asthma and hay-fever in some of the European clinics embrace old tuberculin peptones, and split products of other common proteins. In the use of tuberculin, the treatment was limited to those giving a positive Von Pirquet skin allergic reaction, as in the selection of the bacterial proteins in this country. Most of the cases are found to give positive reaction. Van Leeuwen and Varekamp report that 80% were either entirely or partially relieved. Apparently their service included the various types of bronchial asthma. About the same results are reported by Auld in desensitization with peptones. The American authorities, however, are decidedly favorable to the employment, as nearly as possible, of the specific antigen in the case.

8th. Support of these optimistic views.

In the first place, the prevailing skepticism concerning the effectiveness of the new methods of treatment should be counteracted. In my opinion the greatest handicap today in the treatment of hay-fever and asthma resides in prevailing doubt as to whether the offending antigen can be determined in a given case. Such skepticism persists even after the determination of the causes, because our patients are not convinced that sufficient advance has been made in the desensitization treatment to justify promise of success.

The practical application of the method at our disposal depends upon the education of the public by the profession. We should insist against the fallacious and harmful notion that palliation is to be compared with curative measures. We should insist that these measures consist in avoidance or removal of the cause in each case. We should insist last of all upon the gradual artificial desensitization of the individual. Nine out of ten of these hay-fever and asthma patients, even the intelligent and educated, are deceived by well advertised palliatives which they secure from doctors or druggists. They are not conscious of their inability to discriminate between quick palliative relief and the advantage in relief by correction of the cause. As a consequence, they become rapidly discouraged with the curative measures which often necessarily demand much patience, intelligent understanding, and co-operation

between the patient and his physician, as in all other chronic diseases. No other chronic disease in fact offers a brighter prospect of recovery with sound organs and general health as do hay-fever and asthma.

Our profession and our health departments should stand strongly in the position of educators and insist upon the application of the recent methods in the treatment of these prevalent diseases. Certain of these principles, conducive to human welfare, happiness and health, should be made a part of the public school curriculum, as it exists for example in France and Germany.

### SUMMARY

In this paper, I have called attention to the clinical approach to diagnosis for which the technical and allergic testings are the final aids, though not alone dependable. As an aid to this, I have presented a clinical classification, a clinical interpretation of the relationship of secondary multiple sensitizations to the primary sensitization. I have insisted upon the relative importance of respiratory infection sensitization in all cases and the value of modern methods in the treatment of hay-fever and asthma.

### DISCUSSION

*Dr. Marion T. Davidson (Birmingham):* Dr. Fonde has presented a paper that is of extreme interest to me personally, and I think you will all admit it is of growing interest and of great importance to us all.

Dr. Fonde has covered the subject so thoroughly in the time allotted to him, that it gives me only an opportunity to make a few remarks. I can concur most heartily in practically everything Dr. Fonde has said.

In the first place, I think we should all look on the syndromes, asthma, hay-fever and urticaria, as allergy rather than as separate entities.

We have been taught for a long time that the symptoms of asthma were a symptom complex that might be brought on by any one of half a dozen diseases,—kidney disease, heart disease and others. I think practically all of us who have studied allergy have come to the conclusion it is just as definite an entity as heart disease or tuberculosis or cancer, or any other disease, and that asthma is not a symptom complex brought on by heart disease, or that it is symptomatic of heart disease or kidney disease. The symptoms found in the chest in asthma are about as characteristic when you study them carefully as in any other disease, and are very different from the ordinary

symptom complex found in failing heart or kidney disease.

So, if we will train ourselves to consider the thing as allergy, we will begin to get in the mental attitude of looking at it in a way offering some hope of our finding a solution of these things, and not hope to cure asthma or hay-fever by treating a failing heart or by treating the kidneys.

Second: Dr. Fonde has stressed the importance of a careful history in these cases. A careful history will be very helpful in eliminating unnecessary tests. We must admit the multiplicity of the tests is appalling to many of us still, but a carefully taken history will help us eliminate the tests that are of no importance in many cases.

The great hope in diagnosis depends on improvement in the testing materials and not so much, I think, on improvement in the methods of testing.

The symptoms are brought on by contact with foreign proteins. The contact is through the gastro-intestinal tract or the respiratory tract. The fixed cell tissues are involved, and not the blood stream. While there are elements in the blood stream that are characteristic of asthma and hay fever, nevertheless, for the tests, we have to depend on the fixed tissue of the skin.

There are two methods, of course,—the scratch method and the intradermal method, which Dr. Fonde didn't have time to go into. These two methods have been very carefully developed and our greatest hope is in the improvement in the testing materials. Dr. Fonde mentioned the large number of tests that are to be made. It is to be hoped in the future group tests will be developed which will be sufficiently active to be useful. At the present time group tests which are to be used in testing groups together are not sufficiently active to be of benefit.

On the question of treatment of the multiple sensitization cases, they are difficult to treat, we all admit, but a great many of these multiple sensitization cases, if they can avoid contact, or if they are treated for one or two or three of the chief reactors,—the main things to which they are sensitive,—they can stand the contacts with the others without unfavorable symptoms, and that is the hope we have to hold out to a great many multiple sensitization cases,—that we can't treat them for all the things they are sensitive to, but a great many of them, if they can avoid contact with the chief things to which they are sensitive, will have a great deal of relief and in some cases will be entirely relieved.

Dr. Walker has said only fifty per cent of cases are sensitive. As the tests have been improved and as the methods of testing have been advanced, an increasing number has been found sensitive, until today, by the intradermal method, we can get positive tests on ninety to ninety-five per cent of the cases. We are perfectly frank to admit we don't help that large a per cent of the patients, just why that is, we cannot say.

Dr. Fonde has also mentioned the vaccine treatment. I think that is of importance in some cases. I, personally, have not had quite as pleasant an experience with the vaccines as Dr. Fonde seems to have had. I think the autogenous vaccines are



the ones that offer the most hope of relief. The various organisms in the sputum should be cultured and tests made of each of them, and the vaccine should be made of the organisms which give the most reaction on the skin. In that way, it makes it a rather expensive procedure to make the vaccine, but it offers more hope of relief than the stock vaccine.

I enjoyed Dr. Fonde's paper, and he has given us a most complete discussion of the subject in the time allotted to him.

Dr. G. Heustis Fonde (closing): I have nothing further to add in regard to the subject of my paper. However, I would take this opportunity to direct attention to an observation of mine in regard to oak sensitization in spring hay-fever cases. This is very common in Mobile. I have noticed that the lacrimation and sneezing occur in such cases long before there is any formation of pollen or leaves, after the winter.

In looking for the explanation of this I have noted that there is a deposit upon the automobile wind-shields of fine droplets of what I take to be an oleo-resin of the oak-sap, since it does not readily wipe off, but needs a solvent as gasoline, and then it sticks tenaciously. It seems that the winter-cracking of the bark of the year before allows leakage of the forceable up-rush of the sap, giving rise to the air-pollution. It is well-known that rhus poisoning or rhus dermatitis is contracted without direct contact with the plant. It has been surmised that this might be due to fine hairs wafted from the leaves and plant. Attempts to prove this have resulted in negative findings. It is my conviction that it is due to sap-droplets wafted in the air, as evidenced on the wind-shields from oak sap in the spring. Also this may account for the failure to desensitize sufficiently to prevent lacrimation and sneezing in the hay-fever cases, whereas in the pollenosis asthma cases the relief is obtained more promptly and thoroughly. Is it not possible that antigens from the sap of the plants producing hay-fever would produce a more complete antigen than the pure protein of pollen, which is now used?

## THE GAME BIRD AS A POSSIBLE DISSEMINATOR OF TULAREMIA\*

ERNEST TANKERSLEY, M. D., and  
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Samson

Walter M. Simpson, in the 1930 Year Book on Medicine, points out that tularemia has abruptly become a common, widely spread, and recognizable disease of man. Up to 1924 but 15 cases of the disease in man had been reported; from 1924 to 1930 over 800 cases were recognized in the United States. Cases have been reported from every state except the New England States, Delaware and Washington.

\*Read at a meeting of the Geneva County Medical Society, April 12, 1932.

The Year Book (1930, page 42) states: "While the wild rabbit continues to be the great reservoir of infection, many new animal hosts (wild rats, mice, sheep, muskrats, opossums, wood chucks, cats and game birds) and new insect vectors have been discovered during the past few years, thus pointing to an ever widening dissemination of the disease in lower animal life and to new sources of infection for human beings."

The February 26, 1932 number of Public Health Reports (United States Public Health Service) gives an account of investigations by Parker and his co-workers of an epizootic of tularemia in rabbits and the sage hen in Fergus County, Montana, and records additional cases following contact with quail. In part these investigators state that their findings are of interest for three reasons: "(1) They provide added evidence that at least some species of gallinaceous birds constitute a definite potential source of human infection; (2) they point to the bird tick, *H. cinnabarina*, a tick not heretofore incriminated as a carrier of tularemia, as the most probable agent of the spread of this disease from bird to bird in the area studied; and (3) they afford additional reasons for believing that *Bact. tularensis* is deserving of serious consideration as one possible causal factor of the periodic epizootics that occur among various species of grouse, a question which has been of deep interest to game conservationists in recent years.

"The possibility that *Bact. tularensis* may sometimes be concerned in the causation of epizootics among grouse was first suggested by Parker in 1925, as a result of observations made in Montana incidental to studies of Rocky Mountain spotted-fever virus in nature. These observations were: (1) That the prevalence of tularemia was known or suspected among the local rabbit population in areas where grouse epizootics had occurred; (2) that rabbits and the several species of grouse observed were common hosts of the rabbit tick, *H. deppis-palustris*, a known carrier of tularemia; (3) that the close habitat association between rabbits and certain game birds would facilitate the transfer of rabbit ticks from rabbits to birds and from birds to rabbits; and (4) that local epizootics

which up to that time had been personally observed or had been reported to the station had all been in areas in which rabbits had been dying, the beginning of the grouse epizootic in each instance being subsequent to the beginning of deaths among the local rabbits. This chronological relationship, it was thought, might be due in part at least to the fact that rabbit ticks, as observed in Montana, do not infest grouse until much later in the season than they do rabbits.

"The first opportunity to secure actual field data was afforded in the late summer of 1931, when a correspondent in Lewistown, Montana, reported that during a 3-day open hunting season, August 13-15, dead and patently sick sage hens had been observed on a farm northeast of Roy, and also that numerous ticks had been noticed on killed birds. Tick specimens submitted were identified as *H. cinnabarina*. . . . Ticks and tissues secured were tested at the United States Public Health Service laboratory at Hamilton by the intraperitoneal and subcutaneous infection of salt solution emulsions into guinea pigs, and all tests noted as positive tularemia were verified by the isolation of *Bact. tularense* in pure culture and the agglutination of the latter by known antitularenses rabbit serum."

"Through the kindness of Medical Director Edward Francis", state the investigators, "we are able to include three cases of tularemia following contacts with quail. The patient in the first case had dressed quail only; the other two patients had handled rabbits also. The agglutination tests were made at the National Institute of Health." These case reports follow:

Mrs. A. C., aged 39, Adrian, Mo., house-wife, patient of Dr. Geo. W. Griffith, Garden, Mo., dressed five quail on November 18, 1929. She did not dress rabbits. She became ill on November 24 with fever, pain in right arm, chills. A sore on right thumb later became an ulcer. There was enlargement of the right epitrochlear and axillary glands without suppuration. Blood samples taken on December 9 and 22 agglutinated *Bact. tularense* in dilutions of 1:160 and 1:1,280, respectively, but were negative against *Brucella abortus*.

H. T. P., male, aged 39, patient of Dr. T. E. Strain, Shreveport, La., punctured left middle finger with a quail bone just prior to dressing two rabbits on February 15, 1929. He became ill the next day with severe chill, followed by vomiting, headache, fever, and malaise. A punched-out

ulcer developed at the site of the finger abrasion; the regional lymph glands became painful but had not suppurated by March 12. A blood sample taken on that date agglutinated *Bact. tularense* in dilution of 1:1,280, but failed to agglutinate *Brucella abortus*.

C. W. K., male, aged 29, Ada, Okla., patient of Dr. Lee Riely, Oklahoma City, pricked terminal phalanx of right thumb November 20, 1929, with bone while dressing a quail. The patient had killed and dressed a rabbit a few days prior to November 20, but had handled none on the same day as that on which he dressed the quail. He became ill on November 27 with headache, vomiting, sweating, muscular pain, chills, and fever. The thumb lesion became an ulcer. The right axillary gland became enlarged and suppurated. Serum collected February 14, 1930, was tested both at the National Institute of Health and at the Oklahoma State Laboratory; *Bact. tularense* was agglutinated by a 1:640 dilution.

#### OUR CASE\*

I. L. J., male, aged 54, patient of Dr. Ernest Tankersley, while hunting on or about January 20, 1932, got blood from quail in briar scratch abrasions on the back of the right hand. About January 25 an inflamed blister appeared on the dorsum of the right little finger at the site of one of the briar scratches. The lesion developed into an open ulcer from which inflamed streaks radiated to the epitrochlear glands which were swollen and tender. These later suppurated and drained for a month. On January 28 the patient was quite ill with headache, fever, general malaise, and muscular pains which were most severe in the right hand, arm and shoulder. The elevated temperature, which persisted for two weeks, ranged from 99 to 102.

Blood taken on February 10 and 20 and on March 5, examined by the laboratories of the Alabama State Department of Health, agglutinated *Bact. tularense* in dilution of 1:80, 1:320 and 1:320, respectively. This patient had not handled rabbits.

#### CONCLUSIONS

The wild rabbit continues to be the great reservoir of infection for tularemia but in the light of recent investigations game birds appear to be potential sources of infection. We believe that physicians, especially those in rural sections, should be on the alert for tularemia emanating from a source other than the wild rabbit.

\*Two other positive cases of tularemia have been observed at Samson but are not reported here since the patients gave a history of having handled rabbits.



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## THE NEW ORLEANS MEETING OF THE AMERICAN MEDICAL ASSOCIATION

To the members of the American Medical Association, New Orleans, as always, proved the perfect host. As was anticipated, because of the remoteness of this city from other sections of the United States, the attendance fell below that usually had when the annual meeting is held in a more accessible eastern or mid-western city. However, it was quite gratifying to see the large number of Alabama physicians who availed themselves of the exceptional opportunity to participate in the excellent scientific programs which had been arranged by the various sections, as well as the general clinical lectures held Monday and Tuesday on broad topics of absorbing interest to all physicians. Outstanding among the latter was the symposium on drug addiction, participated in by Dr. P. Woeff, of Berlin, and Dr. Walter L. Treadway, of Washington, D. C.; and the symposium on poliomyelitis, with Drs. Pollock, Park and Campbell contributing. These scientific papers on this important topic were ably backed up by many exhibits and demonstrations dealing with all phases of the treatment and after care of this disease. One of the striking and somewhat disheartening points brought out in this symposium was that made by Dr. Park, who, basing his views upon carefully studied groups of cases treated with and without convalescent serum, concluded that

this agency was of questionable value in the acute stages of the disease. Another symposium which elicited much interest and discussion was that presented at a joint session of the Sections of General Medicine and Public Health, dealing with the social and economic, as well as the professional, aspects of a completely rounded medical service. Conspicuous in this symposium was the contribution made by Dr. Frank Boudreau, of Geneva, outlining the systems of health insurance now in vogue in England and Continental Europe.

In addition to the many scientific features, the weary members of the House of Delegates soon found themselves swamped by an avalanche of business matters heaped upon them. Council and committee members found little time to feast on scientific pabulum and no time to partake of the culinary morsels beckoning them to Antoine's, Galatoirs' and other such tempting haunts. The executive session of Tuesday afternoon brought forth a lengthy and enlightening report from the Committee on Legislative Activities dealing with veterans' legislation. This report was received and the committee continued. On Thursday afternoon interest centered around the election of officers for the ensuing year, when Dr. Dean Lewis, of Baltimore, was chosen President-elect and the South's scholarly and revered Nestor of Surgery—Dr. Rudolph Matas—was honored with the vice-presidency. The genial secretary, Dr. West, as well as the capable speaker, Dr. Warnshuis, were re-elected.

The scientific exhibits—could one but have found time to properly digest and assimilate all upon which the eye feasted—would have proved an education within themselves; however, the superficial scanning of many of these should at least serve to whet the mental appetite and to stimulate a keener desire to the scientific approach of things medical. The new and commodious Municipal Hall with its modern equipment and lighting facilities lent itself admirably to this feature of the meeting.

Milwaukee will serve as host to the Association at its 1933 meeting.

### THE SCIENTIFIC EXHIBITS

Repeated comments were heard that the scientific exhibit this year was the best

that had ever been produced. It would be impossible for any one person to visit, let alone digest, all of the exhibits that were on display. The total amount of time and work put into their preparation was enormous. The exhibits, entirely aside from the programs of the sections, constitute a postgraduate education of no mean value.

This year there were three special exhibits prepared by groups: one on cancer by a special committee consisting of Drs. Max Cutler, Chicago, R. S. Ferguson, New York, and Frank W. Hartman, Detroit; besides presenting charts, models, roentgenograms, etc., illustrating various phases of the problem, there were special programs of motion pictures on each day. Another special exhibit was on poliomyelitis; there were charts, apparatus, motion pictures, talks and demonstrations covering practically all phases of the epidemiology, diagnosis, treatment and after care. The third special exhibit consisted of demonstrations in physical therapy, including hydrotherapy, massage, exercises, etc.

Practically every section had special exhibits, illustrating noteworthy advances in their respective fields. Space does not permit description or even brief mention of all of the interesting exhibits. One which attracted much interest was a very instructive animated motion picture illustrating the normal and abnormal heart-beat, synchronized with electrocardiograms. This film was prepared by Dr. Lewis M. Hurxthal of Lahey Clinic, Boston.

In the public health section, Dr. W. G. Smillie, Professor of public health administration at Harvard School of Public Health, showed several three-dimension graphs, illustrating the decline of tuberculosis and diphtheria, and the trends in pneumonia and influenza.

The exhibit of malaria control activities prepared by our State Health Department attracted considerable interest. Included in this were charts showing malaria death rates, photographs of control activities, motion pictures, and a demonstration of microscopic slides showing the stages in the life cycle of *Plasmodium vivax*. Dr. E. C. Faust of Tulane Medical School had a very complete demonstration of helminth infections, including microscopic prepara-

tions, pathologic tissues, wax models, camera lucida drawings, etc.

In the surgical exhibits there were numerous motion pictures showing the technic of operations, new methods and instruments. The Mayo Clinic, as usual, had a noteworthy demonstration of surgery of the colon and rectum, proctology, and sympathetic neurectomy for Hirschsprung's disease. If one had spent his whole time in the scientific exhibit and attended none of the section meetings, he would have been well repaid.

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#### UNEMPLOYMENT AMONG NURSES

Our present world, it seems, is sadly out of joint for many groups or classes of individuals; but echoes from the biennial convention of nurses held at San Antonio in April indicate that the world is even more out of joint for nurses than for other groups of employed women.

Only a brief twelve years ago a "White Cap Famine" was heralded in the magazines and a dearth of nurses occasioned much concern among organizations, institutions, and physicians, who were responsible for the care of the sick and for the administration of preventive measures. Now, it is alleged that the oversupply is so acute that unemployment among nurses throughout the country threatens to break down the morale of the entire profession.

It would seem that it might be a simple matter to curtail the number of nurse students for a few years until the oversupply is remedied. But, not so—our hospitals have for years depended upon pupil nurses for the routine care of hospital patients. These hospitals could not, or at least they believe they could not, carry on and remain solvent without this nursing service. To see all of our hospitals close, one after another, for lack of funds or for lack of nursing service for their sick patients would be a sad commentary upon the boasted efficiency of our twentieth century civilization.

The tangle in which nurses find themselves involves much more than fat or lean days for the nurses themselves. Community needs encompass the need of nursing care for the sick, in homes as well as hospitals. Expert medical attendance must



be supplemented by proper nursing, in order to become effective. Adequate hospitalization of the severely ill and seriously injured is absolutely dependent upon the services of modern nursing practice.

No one of these interdependent and interlocking interests is solely responsible for the present situation in nursing. The modern nurse was born of the hospital. She properly looks to it as her alma mater. The needs of modern medicine and surgery and the requirements of modern physicians and surgeons, have, for the most part, directed the development of her highly prized professional skill. In her relationships with these two interests, professional and institutional, the nurse hitherto has rightly considered herself fortunate. She has striven to be efficient, and we believe that she has felt both humble and proud in her faithfulness to the trust reposed in her.

Now she finds herself, through no overt act other than the turning of the wheels of time, standing, not between two friends, but, instead, caught between an upper and a nether millstone, the stones, forsooth, turned not by bitter enemies, but—however unwillingly—by her good friends, medicine and surgery on the one hand and hospital nursing school administration on the other. As the wheels turn, slowly, the weeding process goes on, and only the fortunate, the efficient, and the eternally faithful can withstand the pressure.

Isn't it time for nurses to go into partnership with the public and for these two to go into open-minded conclave with medicine and surgery and hospital management in order to work out some practicable method of nurse education and distribution that shall prove less wasteful and uncertain for nurses and less expensive and burdensome for the public?

## DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF ADMINISTRATION

J. N. Baker, M. D.  
State Health Officer in Charge

#### TEAM-WORK AND THE INTEGRATING UNIT

More than one year ago, the need was felt for a plan whereby a greater degree of "team-work" might be developed in our health units in the field. Out of good team-work comes greater productivity, higher efficiency and a finer spirit of loyalty and enthusiasm. To meet this need "The Integrating Unit" was created.

The experiences gained through a year of trial and testing seem to amply justify this method of approach in rendering aid to field workers from the central staff.

A recent article, appearing in the January issue of the "Journal of Public Health Nursing" and contributed by a joint committee from the State and Provincial Health Authorities of North America and the National Organization of Public Health Nursing sets forth so concisely the objectives had in mind when the integrating unit service was first inaugurated in Alabama that the liberty is here taken of quoting, in full, two sections from this contribution:

#### *"The Spirit of the Unit is the Keynote"*

"At the outset it is agreed that the spirit is more important than the mechanism. A good plan often goes wrong where morale is lacking, and even a bad plan has a good chance of success where enthusiasm, confidence and good-will are present. This is not intended, however, as an argument in favor of bad plans.

"This spirit is most likely to prevail where the health officer of the unit looks upon his staff as a group of experts working with, as well as under, him for a common cause, and where the staff are capable of thinking in terms of the whole and of sinking personal or professional pride, in pride of the unit, and in terms of the public good and public welfare regardless of individual opinions, traditions or special interest.

"That an ideal relationship between leader and staff is difficult, and demands broad qualities, we admit. It is relatively easy to be the boss and to be bossed. It is far more of a test to be the leader of a group of free minds, exercising authority without dictatorship and encouraging individual responsibility and initiative without losing unity of purpose and action. Likewise, it is a difficult challenge to the staff member to accept responsibility and to use his initiative without getting out of step.

"To sum up, we believe the work of the County Health Unit must be a harmonious whole in spirit and in fact, and that to achieve this there must be central authority, the health officer, but that the unit is likely to have greater vitality and richer development if the health officer will delegate to his staff as much responsibility and initiative as

possible within the limits of the policies and program laid down for the unit as a whole."

*"How This May Be Accomplished"*

"It may be useful to outline what is meant by this general statement. The theory of a partnership, the health officer being in command and the staff experts being of equal status with each other, would mean, we assume, that important matters affecting the work of the unit as a whole, such as the annual choice of objectives, the arrangement of the work to achieve these objectives, the policies governing the work, even the make-up of the budget will be discussed with the staff, the health officer of course having final authority, but in so far as possible giving the staff opportunity to make suggestions before he comes to a decision.

"Having decided upon objectives, the staff should be required by the health officer to present him with plans for the utilization of their respective services to the best advantage in gaining these objectives. This would force the individual staff member to think and to weigh values. It would also give him a chance to use all the inventive talent he or she had, as well as his more intimate knowledge of procedures in his own field. It would then be necessary for the health officer to co-ordinate and unify these individual service plans, making such changes as he might think advisable, after discussion with the group as a whole or individually.

"There are numerous ways in which the health officer may keep his staff 'on their toes'. We suggest only a few, such as including them in discussions with others on matters touching their particular fields; having them meet distinguished visitors; allowing them to speak for their particular branch of the work; encouraging them to write about it; training them to prepare monthly reports and to develop the habit of analysis, and in all ways treating them as partners who have a stake in the success of the unit.

"On the other hand, each staff member may contribute his share to the enthusiasm of the unit by learning to think in terms of the unit and not merely his own specialty; to give and take; to adjust his methods to the common methods; to put the work that is to be done ahead of professional privilege. He must accept decisions which may not always seem to him for the best, with a high sense of loyalty. Difference of opinion well under control may often be wholesome, but where there is such incompatibility as to affect his loyalty to the unit, his resignation becomes necessary as a matter of self-respect.

"We have dealt here in terms of the whole staff because we have no desire to single out the nurse for peculiar honor or individual treatment and because we believe the methods which will arouse her to her best efforts will produce the same result from the other members of the staff.

"Among the members of the staff themselves, it is obvious that there must be a relationship based on interest, collaboration, respect and willingness to share and share alike."

## BUREAU OF LABORATORIES

L. C. Havens, M. D., Director

### CULTURAL DIAGNOSIS OF TUBERCULOSIS

Contributed by

George A. Denison, M. D.,

Director of Laboratories, Jefferson County Board of Health

Unfortunately, the direct examination of sputum and urine for tubercle bacilli is very frequently negative unless the case is an "open" one, and well advanced clinically. For this reason, diagnosis is probably more often made without the demonstration of the organisms than with it. Animal inoculations are much more dependable but their cost prohibits the repeated examinations so necessary to establish the reliability of negative results. Again, it seems doubtful if several negative animal tests should be considered with such reliance and finality as is given them by some clinicians.

Cultural methods appear to be fully as reliable as animal inoculations. They are inexpensive and numerous examinations can be made with little cost. The following table summarizes our results obtained on fifty specimens with (1) direct smear of concentrated material, (2) animal inoculation and (3) glycerol-potato culture medium of Corper<sup>1</sup>.

*Results Obtained with Culture and Animal Inoculation*

	No.	%
Total specimens examined.....	50	100
Positive with both methods*.....	8	16
Total positive by animal inoculation.....	9	18
Total positive by culture.....	26	52
Negative culture, positive animal inoculation .....	1	2
Positive culture, negative animal inoculation .....	14	28
Positive culture, unsatisf. animal inoculation .....	4	8

Only 4 per cent of the fifty specimens were positive on microscopic examination after digestion of the material with formalin and concentration of the sediment; 18 per cent were positive by animal inoculation and 52 per cent by cultural methods. The majority of discrepancies between cultural and animal tests occurred with urine specimens in which the organisms, very

1. J. A. M. A. 91:6, 372, 1928.

\* 2 positive by direct smear.



commonly, are few and hard to demonstrate. Eight urine specimens were positive only by culture and one was positive only by animal inoculation.

Large amounts of the concentrated material may be inoculated into several culture tubes, whereas only a comparatively small amount may be injected into a guinea pig. This probably accounts, in a large measure, for the more favorable results with the culture method. Four guinea pigs which might possibly have been positive died with pneumonia shortly after injection.

Acid treatment is given the material to destroy smegma bacilli and other contaminating organisms before seeding the cultures. Should Timothy hay or other non-pathogenic acid fast bacteria be present, they are easily recognized by the rapidity of growth during the first few days. Positive cultures of tubercle bacilli were not obtained under 21 days, an average of 49 days being required. The average time required to obtain positive results with animal inoculation was 52 days. Herrold<sup>2</sup> claims positive results with egg yolk medium in four to eight days. This is a considerable saving of time.

In conclusion, the ease with which large amounts of material may be cultured, and the low cost of making repeated examinations, should popularize the use of cultural methods. With recovery of the organisms more certain, laboratory confirmation of clinical diagnosis can be made earlier in the disease. We believe cultural methods are especially applicable to renal tuberculosis.

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### STATE VENEREAL CLINICS

The State Board of Censors recognizes that the ultimate success of any plan looking to the clinical control of the spread of venereal disease must have, not only the sympathetic support of the medical profession, but also that such support should be enlisted by giving to the members of the profession a voice and financial interest in

the execution of such plans. In all public health work conducted in this State, the voice of the profession is now articulate. Inasmuch, however, as these clinics are operated and financed largely by the State Department of Health and are not an integral part of county health units, but often serve more than one county, the Board feels that, while every consideration should be given County Medical Societies in the selection of personnel and in the conduct of these clinics, the final decision as to personnel and policy should rest with this Board. In order to stimulate a keener interest among all members of the profession in this important work, the Board, at its last meeting, in April, adopted the following regulations governing the operation of the free venereal clinics.

#### OPERATION OF STATE VENEREAL CLINICS

Hereafter, whenever a decision has been reached by a County Medical Society and the State Committee of Public Health that a free venereal clinic is to be established at any point in a county, the following rules shall govern:

(1) That the members of a County Medical Society, in regular meeting, shall submit to the County Board of Censors the names of one or more members whom they consider suitable and competent to do this particular work.

(2) That, from the names submitted to the County Board of Censors, it shall recommend to the State Committee of Public Health, through the State Health Officer, the name of one member for the position of venereal clinician.

(3) That the term of service of such clinician, when approved by the State Committee of Public Health, shall be fixed at two (2) years.

(4) That such clinician may be eligible to succeed himself.

(5) That the right of removal of such clinician shall vest in the State Committee of Public Health when, in its opinion, such action is justified in the interest of public health.

(6) That the salary of such clinician, when paid in whole, or in part, by the State, shall be fixed by the State Committee of Public Health.

(7) That the formulating of rules and regulations governing the operation of

such clinics is the responsibility of the State Committee of Public Health.

(8) That the Board hereby re-appoints for a period of one year from this meeting, the clinicians now serving in this capacity.

## BUREAU OF VITAL STATISTICS

W. T. Fales, Director

Ethel Hawley, Acting Director

### FATAL MOTOR VEHICLE ACCIDENTS, ALABAMA, 1930

When it is realized that automobile accidents kill more white people in Alabama each year than typhoid and malaria combined, and furthermore, that the death rate from this cause is still increasing, accident prevention becomes a public health problem. A comparison, by years, of the total deaths and rates per 100,000 population and motor vehicles registered follows:

Year	Total Deaths	Death Rate per 100,000 Population	Number of Automobiles Registered	Death Rate per 100,000 Automobiles
1930	491	18.5	277,146	177.1
1929	451	17.2	285,533	157.9
1928	380	14.8	269,519	141.0
1927	359	14.1	243,539	147.4
1926	321	12.7	225,930	142.1
1925	256	10.4	194,580	131.6
1924	173	7.1	157,262	110.0
1920	67	2.8	74,637	89.8
1915	36	1.6	11,634	309.4

A comparison with a similar table compiled by the State of Kansas shows that, while Alabama has a lower rate per 100,000 population, 18.5 for Alabama and 24.4 for Kansas, the Alabama rate per 100,000 motor vehicles registered is twice as high as in Kansas—177.1 for Alabama and 79.1 for Kansas.

The death rate was highest in cities of less than 10,000 population, with a rate of 21.6 per 100,000 and lowest in cities of 10,000 and over, with a rate of 17.2. The rural rate of 18.7 is slightly higher than the total urban rate of 18.0. This would indicate that the traffic regulations in force in the larger cities were having a beneficial effect on the number of accidents.

There were 522 motor vehicles reported as being involved in fatal accidents. Reports were not received as to the type of vehicle in sixty-six cases. Of the remaining 456 vehicles, 324, or 71% were passenger automobiles; 117 or 26% were trucks;

two were taxicabs; three were school buses; two were other buses, and eight were motorcycles.

Non-collision accidents were responsible for 146 or 30% of all accidents. This includes all accidents where a car overturns without collision with another car or with a fixed object. It is quite significant that only nineteen or 13% of these accidents were attributed to mechanical defects of the car.

145, or 29% of the deaths were of pedestrians. Twenty-four of these people were crossing the street, mostly at intersections. In twenty-two cases the accident occurred on a country road. Fourteen children playing in the street were killed. Twelve persons were killed by a "hit and run driver".

Twenty-six persons were killed in railroad crossing accidents.

The above figures would indicate that reasonable care on the part of drivers would materially cut down the accident rate.

## BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

Jessie L. Marriner, Director

### JUST WHAT DO YOU DO, ANYWAY?

Contributed by

Mrs. Emma C. Lake, Perry County Health Nurse,  
Marion

All public health work is primarily educational and preventive. Some one has said that public health nursing is home visiting, because so much of a county health nurse's work is with mothers and children. Her work naturally groups itself under four heads:—

1. Maternal and infant hygiene.
2. Child hygiene.
3. Assistance in communicable disease control.
4. Assistance in tuberculosis control.

*Maternal and Infant Hygiene:* Every mother should know what adequate maternal care is, and be satisfied with no less. She should be under the care of a physician during the entire prenatal and post-natal periods. The county nurse visits an average of 25 maternal cases per month. The purpose of these visits is to get pa-



tients to a physician as early as possible in the prenatal period, help them carry out instructions of the physician, assist and instruct them in preparation of supplies for delivery and clothing for the infant, suggest proper health habits, diet, clothing, rest, exercise, demonstrate and instruct them in the care of the infant, stress the importance of prophylactic solution in the new-born baby's eyes, and even that babies need a drink of boiled water before it is old enough to ask for it.

A seemingly necessary evil in this county is 83 midwives who have attended 193 births since the first of January of this year, 23 of which were white. In an effort to control their work the nurse meets these midwives in 3 different sections of the county once each month to instruct them in the care of mothers and infants and to acquaint them with the State laws governing their practice. An ignorant, superstitious negro woman is a very dangerous substitute for a physician at a most critical time of a mother's and baby's life. We hope finally to educate the mothers, and white mothers particularly, away from the midwife.

*Child Hygiene* really begins with the prenatal care of the mother, because the future health of the child is directly influenced by the health habits of the mother. Through continued contact in the home, the nurse has an opportunity to stress the importance of protecting the child against all the preventable diseases as early in life as possible, and certainly before it reaches school age. After the child enters school the nurse usually assists the health officer in making health examinations at school, then visits the home again with the child's health record to arrange for correction of defects, suggest diets for underweights, proper health habits and distribute health literature on various health subjects.

*Communicable Disease:* In communicable disease control the nurse assists the health officer in whatever clinics he may organize for control of diphtheria, smallpox, typhoid, hookworm disease and tuberculosis. Where these diseases occur in the home it is the duty of the nurse to instruct and demonstrate to some one in the home the proper care of the patient and protection of contacts.

*Tuberculosis Control:* There are 42 homes in this county that we know of, where there has been or now is, one or more active cases of tuberculosis. These cases have 243 direct contacts, which are visited regularly, supervised and assisted in carrying out the physician's instructions regarding care of patient and protection of contacts.

This is only a brief summary of a county health nurse's work.

"Nursing is only a spoke in the great wheel of social work and our group aim is to make that spoke strong enough to carry the load of its own technical service and to give support and strength to the other spokes in order that the wheel may turn,—covering the ground with well-marked tread pushed forward by the co-operative efforts of all."—Quoted from article by Clara B. Rue, R. N., in April, 1932, *American Journal of Nursing*.

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## BUREAU OF ENGINEERING

G. H. Hazlehurst, Director

### THE CHEMICAL QUALITIES OF PUBLIC WATER SUPPLIES AS RELATED TO PUBLIC HEALTH

Contributed by  
H. G. Menke

There are chemical impurities in all waters used as public supplies. The majority of these are present as the result of natural phenomena. Some are introduced during the process of purification. None, or very rarely any, of the chemicals are deleterious to the human system in the concentrations in which they exist.

Water has often been called a universal solvent. This ability to dissolve the chemicals found in the earth's crust is increased by the natural acquisition of carbonic acid gas by the water. Rain water as it falls through the atmosphere absorbs carbonic acid from the air along with other gases. Even rain water by the time it reaches the earth is no longer pure. The solution of carbonic acid gas is furthered as the water percolates over and through the ground where carbonic acid is present as a result of organic decay.

Carbonic acid also results from the reaction between the coagulating chemicals in water purification and in such supplies the

content is increased unless removed by a secondary process. Carbonic acid in waters of public supplies is not injurious to the health of drinkers of the water.

Minerals, found in waters naturally, include the most common elements as silica, calcium, magnesium, sodium, potassium, aluminum, iron, manganese and in a lesser extent, barium, lithium and sulphur. Other elements may be present in certain waters.

The basic ions are usually associated with the following acid radicals: bicarbonate, carbonate, sulphite, sulphate, nitrite, nitrate and chlorides to form hypothetical combinations.

These minerals are determined by chemical analyses of samples of the water. The best way to express results is in the ionic form; that is, by giving the actual substances present without endeavoring to associate them in combinations in which they are found in the earth's crust. The reason that the ionic form of expression is preferred over the statement of results in hypothetical combinations is because it is now known that the chemicals are present at least partly in dissociated form.

Various schemes for placing the ions into combinations are in use and because of the wide variation in the significances of the results obtained by different schemes, a true picture of the water cannot be drawn. A water may be made to look good or bad for certain specific uses according to the choice of combining schemes used.

In supervising public water supplies in Alabama, the Bureau of Sanitary Engineering classifies them into three groups: (a) Surface waters; (b) shallow ground water (springs and shallow wells); and (c) deep ground water.

The classification cannot be made rigid for some spring waters may be artesian and from great depths, but the classification serves the purpose when considered from the view-point of all influencing factors.

Surface waters as a rule carry less mineral concentration than waters of the other types. This can easily be inferred because the water has not had as intimate contact with the earth's crust as has that which has percolated through the soil.

Springs and shallow wells are next in chemical purity as the time of contact is less than in deep ground waters.

Deep wells usually provide the highest mineralized water.

Naturally, there are variations to the above statements, but as a general rule they hold true.

The natural mineral content of waters may be altered by treatment. Minerals may be added or withdrawn according to the object of the treatment.

The general consensus of opinion among students of the subject is that minerals normally present in waters of public supplies are not injurious to the health of users. Generally the substances found present are harmless and even those substances which might have ill effects, if present in sufficient quantity, rarely approach such concentrations.

Limits of tolerance for certain constituents have been set by the U. S. Public Health Service, but these limits are more or less fixed on account of potability, domestic or industrial usage, rather than as factors influencing health.

Such limits as have come to the writer's knowledge are as follows: Sulphate 250 p.p.m.; magnesium 100 p.p.m.; chlorides 250 p.p.m.; iron 0.3 p.p.m.; and manganese 0.3 p.p.m. From the pipes other elements may be absorbed and their limits are: Lead 0.1 p.p.m.; copper 0.2 p.p.m.; and zinc 5.0 p.p.m. (The abbreviation, "p.p.m.", stands for "parts per million" by weight and is the generally accepted unit used by chemical analysts. As the unit of measure of public water supplies is one million gallons and a gallon of water weighs approximately 8.34 pounds, one part per million gallons is equivalent to 8.34 pounds per million gallons.)

The above are expressions in ionic form. If the substances are considered as in combined form, the following limits may be generally accepted.

Sodium chloride will cause a noticeably salty taste if in excess of 250 p.p.m.

Calcium carbonate contributes to hardness and with other similar salts should not total in excess of 250 p.p.m.

Calcium sulphate or gypsum is troublesome from a permanent hardness



standpoint and if in excess of 400 p.p.m., gives the so-called "gypsum taste".

Sodium sulphate, Glauber's salt, will give a noticeable laxative effect if in excess of 500 p.p.m.

Sodium carbonate or soda ash if in excess of 800 p.p.m. gives a greasy feel to the water.

Magnesium carbonate resembles calcium carbonate in its effects and together with that salt should not exceed 250 p.p.m. mentioned.

Magnesium sulphate, Epsom salts, contributes to permanent hardness of the water and if in excess of 500 p.p.m. has noticeable laxative effect.

Magnesium and calcium chlorides add to hardness, but are rarely present in sufficient quantities in Alabama waters to cause noticeable effects either domestically, industrially or as regards human consumption.

Iron is becoming increasingly a problem in Alabama waters. The content found does not injuriously affect the human system, but amounts in excess of 0.3 p.p.m. cause laundry stains and stains on porcelain fixtures as well as other difficulties.

Manganese causes troubles similar to iron and should not exceed 0.3 p.p.m.

In addition to these salts, which may be present naturally, some traces of rarer minerals may be found. However, they do not influence the properties of the water in domestic use.

In water purification some chemicals are used which would, if ingested in sufficient quantities, affect human systems. However, let it be clearly understood that these chemicals, when used, are either removed entirely or chemically changed so that they are completely innocuous before the water is put into the distribution system.

In conclusion, it can be said that the mineral content of waters used in public supplies rarely, if ever, injuriously affects the system of the user.

Water treatment works are mainly to remove injurious bacteria or to lessen the amount of chemicals that are undesirable from a domestic or industrial use. Money is saved by softening hard waters, but a hard water may be just as good to drink as a soft one.

## BUREAU OF INSPECTION

C. A. Abele, Director

### INTERSTATE INSPECTION OF FOOD-HANDLING ESTABLISHMENTS

In accordance with authority vested in it (Sections 1051, Sub-divisions 4 and 6, and 1146, Code of 1923), the State Board of Health has adopted regulations governing the processes employed and practices followed in eating establishments, soda founts, bakeries, ice cream plants, oyster opening establishments, cheese plants, creameries, dairies and milk plants, bottling plants, and fair grounds and carnival concessions. Eating establishments (including fair grounds concessions) and soda founts, do not sell their output at any distance from the establishments; but all of the other types of establishments may ship their products considerable distances to market them, and these products frequently cross state boundary lines.

The object of the State Board of Health regulations is to protect the citizens and inhabitants of this State from infections which might be transmitted in foods or beverages. It is obvious, therefore, that, in order to be consistent in the enforcement of these regulations, the State Board of Health must apply them to all foods sold in the State which are subject to them.

There can be no doubt that foods and beverages produced in adjacent states, and marketed in Alabama are also subject to any regulations promulgated by the Alabama State Board of Health, and it follows that some means of ascertaining that these regulations are complied with in the production and manufacture of such foods must be adopted.

The ideal solution of the problem would be the adoption of uniform regulations by all the states of the Union, and enforcement of these regulations upon a uniformly high standard. It would then be possible for enforcement officials to assume that all food-handling establishments in adjacent states fully comply with all regulations, and to accept assurances to this effect without question. The nearest approaches to this ideal are the shellfish and milk control situations. Regulations governing the culture, taking, opening, and packing of oysters and clams were formu-

lated by a committee representing the whole shellfish industry, the Public Health Service, and the Bureau of Fisheries, and were then submitted to all the seaboard states for adoption. In some cases these regulations were adopted and are enforced by Bureaus of Fisheries, in others by a division of the State Department of Agriculture, and in the majority by the State Board of Health. The significant facts are that the regulations are uniform, or essentially so, and that the U. S. Public Health Service maintains a rather effective check on the enforcement activities of the several states. The result is that certification of shellfish dealers by any state agency may be accepted without question by all other states, thus obviating the necessity for separate inspections, or the adoption of an attitude of *laissez-faire*.

The milk control situation is not so ideal as the status of shellfish control. Although the Alabama, Mississippi and Tennessee State Boards of Health have adopted the U. S. P. H. S. milk ordinance as the standard milk control legislation in these states, this is not true of Georgia and Florida. Furthermore, the quality of milk shipped out of a state is rarely regarded as the concern of the state of origin, but rather that of the locality in which it is consumed. Consequently, the practice of accepting the reports of the enforcement agencies of adjacent states concerning the sanitary conditions at dairy farms and milk plants shipping products into this State has not been adopted.

There is no approach whatsoever to uniformity of regulations concerning the production of bakery products, ice cream and ice cream mix, and carbonated beverage bottling plants in the group of states of which Alabama is the center. Indeed, some of the adjacent states have no regulations for the control of bottling plants. Nor is the enforcement of such regulations as exist universally vested in the State Board of Health. In Mississippi and Florida this is the case; in Tennessee this function is vested in the State Department of Agriculture, and in Georgia there appears to be conflict or an undefined division of responsibility among the State Board of Health, the Department of Agriculture, and the State Veterinarian. The inspec-

tion personnel of the State Boards of Health of Mississippi and Florida are limited, and inspections of establishments in these states are not frequently made by the state personnel.

The alternatives faced by the Alabama State Board of Health, then, are:

(1) The acceptance of the assurances of the State Boards of Health, Departments of Agriculture, or State Veterinarians of adjacent states that conditions at food-handling establishments shipping products into this State conform to Alabama State Board of Health requirements, or reports to the contrary.

(2) The acceptance of similar assurances from local health officers or inspectors.

(3) The conduct of inspections by the Alabama State Board of Health.

(4) The refusal to accept assurances from State or local authorities, the discontinuance of Alabama State Board of Health inspections, and the placing of embargoes against the shipment into this State of food products subject to regulations made beyond its boundaries.

It is clear that, in the absence of uniform regulations, and in the face of widely differing enforcement policies in the several states, no uniform policy with respect to the acceptance of assurances (the first alternative) can be formulated. It is also obvious that assurances of such a nature would be of little value in the absolving of the State Board of Health of responsibility for any outbreak of disease traceable to infected products of out-of-state establishments.

The wisdom of accepting assurances from local health officers (the second alternative) is equally or more questionable. Very few of the twenty-five or more cities in adjacent states, from which food products are shipped into Alabama, have inspectors, or even full-time health officers. The views of part-time inspectors or health officers with respect to compliance with specific regulations are relatively valueless. There is always the element of pride in or loyalty to local institutions to be considered as a weighty factor in reports from such officials. And there is also ample concrete and conclusive evidence to the effect that local inspectors occasionally issue



false statements concerning existing conditions.

The acceptance of assurances from certain individuals, coincident with the refusal to accept such assurances from other individuals, would no doubt result in embarrassing situations when discovered. It has appeared to be the safer policy, therefore, to accept no assurances *de novo* from local health officials, but to limit the acceptance of such assurances to those pertaining to conditions existing at the time of re-inspections closely following inspections by representatives of the Alabama State Board of Health.

The third alternative is that now being followed. Inspectors of the Alabama State Board of Health, after making contact with the interested state or local authorities, conduct inspections of bakeries, bottling plants, ice cream plants, and dairies or milk-plants shipping products into Alabama, with a degree of frequency varying from two or three to twelve or more times annually. Records of these inspections are kept on file. Whenever conditions fall too far below the standards enforced in this State, embargoes are placed on the shipment into Alabama of the products of such establishments until the regulations are complied with.

The Mississippi and Tennessee authorities have adopted a similar policy of inspection of Alabama establishments shipping products into their states, although these visits are rather infrequent.

The fourth alternative violates one of the precepts of the Federal Constitution; that is, it is arbitrary interference with interstate commerce, the control of which is a function of Congress only (see Article 1, Section 8, Sub-division 3, Federal Constitution). Waiving this violation of constitutional principle as an argument against the adoption of the fourth alternative, it is quite evident that this alternative violates every principle of ethics and justice. In the absence of evidence that a food product is potentially dangerous to consumers, it appears to be a stretch of legitimate authority to embargo a product because its safety has not been established, and also to decline to accept the statements of local authorities designed to establish its safety.

(To be concluded in the July number.)

## CURRENT STATISTICS

### State Department of Health

#### \*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1932 April	1932 March	Total Cases to Date This Year Last Year	
Typhoid	39	27	185	93
Malaria	74	37	215	243
Smallpox	81	45	331	153
Measles	111	23	181	7619
Scarlet fever	71	82	425	635
Whooping cough	304	146	661	281
Diphtheria	77	58	442	457
Tuberculosis	438	410	1518	1658
Pellagra	45	29	105	139
Meningitis	9	4	27	129
Tetanus	9	3	18	7
Influenza	1301	383	2305	5473
Dengue	1	1	2	0
Poliomyelitis	2	0	10	11
Pneumonia	501	331	1586	2292
Chickenpox	221	163	717	1242
Mumps	199	89	516	844
Encephalitis	1	0	3	19
Ophthalmia neonatorum	5	3	10	6
Typhus	12	5	26	12
Trachoma	0	0	0	2
Tularemia	3	3	17	5
Undulant fever	0	1	1	3
Rabies	0	0	0	0
Syphilis (private cases)	204	166	664	468
Chancroid (private cases)	2	7	21	19
Gonorrhea (private cases)	116	113	486	526

\*As reported by physicians and including deaths not reported as cases.

#### PROVISIONAL MORTALITY STATISTICS Alabama, March 1932

	Number of Deaths Registered March 1932			Annual Rate per 100,000 Population		
	White	Black	Total	March 1932	March 1931	March 1930
ALL CAUSES	1464	1197	2661	1158.5	1243.1	1173.5
Typhoid fever	3	4	7	3.0	1.3	1.8
Smallpox						0.4
Measles		1	1	0.4	18.4	5.3
Scarlet fever	5		5	2.2	1.3	0.9
Whooping cough	6	6	12	5.2	4.8	10.2
Diphtheria	8	1	9	3.9	2.6	4.0
Influenza	74	56	130	56.6	113.8	63.7
Pneumonia, all forms	165	112	277	120.6	131.8	109.8
Poliomyelitis					1.7	0.4
Tetanus	1	2	3	1.3	1.3	1.3
Tuberculosis, all forms	67	111	178	77.5	90.6	89.9
Tuberculosis, pulmonary	61	101	162	70.5	84.5	82.3
Malaria	4	4	8	3.5	3.1	0.9
Cancer, all forms	100	27	127	55.3	56.5	46.5
Diabetes mellitus	16	7	23	10.0	14.0	10.2
Pellagra	14	9	23	10.0	18.8	19.0
Cerebral hemorrhage, apoplexy	89	55	144	62.7	68.7	63.7
Diseases of heart	192	103	295	128.4	116.9	150.5
Diarrhea and enteritis						
Under 2 years	6	6	12	5.2	3.5	10.2
2 years and over	13	2	15	6.5	4.8	3.5
Nephritis	96	83	179	77.9	101.1	100.5
Puerperal state, total	19	26	45	19.6	19.3	21.7
Puerperal septicemia	5	6	11	4.8	4.8	4.0
Congenital malformation	17	2	19	8.3	6.1	9.7
Congenital debility and other diseases of early infancy	76	42	118	51.4	60.0	62.4
Senility	16	25	41	17.8	14.9	15.5
Suicides	18	6	24	10.4	10.1	9.3
Homicides	10	23	33	14.4	17.1	22.6
Accidental burns	12	9	21	9.1	10.5	9.3
Accidental drownings					3.1	5.3
Accidental traumatism						
by firearms	2		2	0.9	3.1	2.7
Mine accidents	1	1	2	0.9	2.2	4.0
Railroad accidents	5	7	12	5.2	4.8	3.5
Automobile accidents	22	7	29	12.6	13.7	16.4
Other external causes	159	101	260	113.2	26.3	25.2
Other specified causes	167	173	340	148.0	163.7	164.7
Ill-defined and unknown causes	78	186	266	115.8	132.6	108.4

## Truth About Medicines

**Electrovita.**—"Electrovita" is said to be manufactured by the Electrovita Company, Inc., of Norwalk, Ohio, which has for its general distributors the Electrovita Sales Company of the same city. According to the label, Electrovita is an "artificial mineral water." The claims on the trade package are mild and conservative as becomes statements that come under the National Food and Drugs Act which prohibits fraudulent claims on trade packages. But the trend of such advertising as is *not* on the trade package and therefore not subject to the Federal law, is to make the public believe that this city tap water, that has been subjected to electrolysis, has taken on some esoteric qualities that changes it from ordinary hydrant water into a veritable catholicon—a panacea for whatever may ail you. Both the printed leaflets and the Sales Manual declare that the exploiters of Electrovita do not recognize specific disease or promise a specific cure but the Sales Manual contains references to specific conditions, such as, cancer, arthritis, syphilis, female trouble, venereal disease, etc. From an examination of Electrovita in the A. M. A. Chemical Laboratory it may be calculated that the product consists essentially of 0.068 Gm. of calcium hydroxide in 100 cc., with a very small amount of calcium sulphate. This is equivalent to approximately 49 per cent of the strength of lime water U. S. P. It would be difficult for the Electrovita people to persuade the public that they have the marvelous panacea that they claim, if they admitted that their preparation was merely ordinary, official lime water, half-strength. (Jour. A. M. A., January 23, 1932, p. 337)

**Injectable Ovarian Preparations Omitted from N. N. R.**—In 1930 the Council on Pharmacy and Chemistry omitted all desiccated ovarian preparations for oral administration, provisionally retaining those intended for intramuscular or hypodermic administration. The manufacturers of these products were informed that these would be omitted at the close of 1931 unless meanwhile methods of assay for hormone content were adopted and acceptable evidence for their effectiveness submitted. The interested firms have not submitted

such evidence. As to the adoption of an assay method, it was later decided on the basis of opinions expressed by the Council's consultants that our present knowledge make it undesirable to adopt assay methods for the determination of the hormone content of these water-soluble preparations. Since no acceptable evidence exists for the usefulness of such preparations, the Council voted to omit Ovarian Substance Soluble Extract—P. D. & Co., Corpora Lutea Soluble Extract—P. D. & Co., Corpus Luteum Extract—Lederle, Corpora Lutea Soluble Extract—Wilson, and Sterile Solution of Lutein—H. W. & D. (Jour. A. M. A., January 30, 1932, p. 402)

**Ovaltine Not Acceptable.**—The Committee on Foods reports that Ovaltine is a chocolate flavored malt extract, containing a small quantity of dried milk and eggs which is sold with two slogans: "A food beverage" and "A food concentrate". From its examination of the product, the Committee concludes that Ovaltine is essentially a carbohydrate food, and that its value in gaining weight is no more nor less than that of other similar carbohydrate mixtures, and that Ovaltine is sold with grossly exaggerated claims; its composition is kept a mystery, and that even if it did contain what the manufacturer says it does, it could not do the things the manufacturer says it will. The Committee has listed Ovaltine with the products not acceptable. (Jour. A. M. A., December 12, 1931, p. 1798)

**Sedormid.**—"Sedormid" is a carbamide—chemically, allylisopropyl-acetyl-carbamide. It may be looked upon as a chemical decomposition substance of allyl-isopropyl-maloylurea (allyl-isopropyl carbituric acid), which is the hypnotic component in the non-accepted but widely advertised proprietary "Allonal". The Council on Pharmacy and Chemistry has not accepted "Sedormid" for inclusion in New and Nonofficial Remedies, nor has the firm requested consideration of the product. The clinical reports on "Sedormid" are too vague and incomplete, being in the nature of testimonials embodying impressions and opinions, to warrant the claim that "Sedormid" is superior to other hypnotics and comparatively safe. (Jour. A. M. A., March 26, 1932, p. 1104.)



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## THE JOURNAL OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

### Volume 1

July 1931—June 1932

#### EXPLANATORY NOTES

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C—Case Report.

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# Miscellany

## SOCIAL INSURANCE

*Abstract of articles on the subject by  
Dr. Edward H. Ochsner*

Foreword: At the last meeting of the Association held in Mobile, this body approved a recommendation submitted by the State Board of Censors that an abstract of articles, prepared by Dr. Edward H. Ochsner of Chicago on Social Insurance and appearing in some of the State Medical Journals, appear in this Journal. In compliance with this action an abstract of five articles, which have already been published, is given below.

Dr. Ochsner, in an article on The Genesis of Social Insurance, writes:

Social insurance consists of the following subdivisions or parts: Compulsory health insurance, old age pensions, widows' and orphans' pensions, and unemployment pensions or doles. In none of the countries were they all adopted at the same time. Germany adopted compulsory health insurance in 1883, and all of the other forms since that time. Austria adopted compulsory health insurance in 1888; Hungary in 1891. England adopted old age pensions first and compulsory health insurance in 1911, and the other subsequently. In this country some of the states have adopted old age pensions and some widows' and orphans' pensions, but so far none have adopted compulsory health insurance.

The writer traces the growth of a sentiment in favor of compulsory health insurance among the workers in Germany, which led Bismarck to adopt social insurance as a government measure although he expressed serious doubt of its soundness.

In England, National Insurance, as it is called there, had a slightly different setting but substantially the same background. Its cause was espoused by David Lloyd George, in 1910, in order to strengthen himself politically. The Liberty Party, of which he has been the leader for many years, was successful in 1911 when National Insurance first went into effect but lost heavily in 1931, due, Dr. Ochsner believes, to the unpopularity of his insurance measure.

The reader's attention is called to the futility of overzealous reformers who secure the passage of some law designed to correct human ills and then forget to see that the

law is enforced. They even forget that all laws depend for their enforcement not upon supermen but upon men often of less than average intelligence and integrity. Such men are quick to see how unsound or loosely drawn laws may be converted to their own advantage. This is what is happening in at least some of the countries where compulsory health insurance is in operation.

ALL FORMS OF SOCIAL INSURANCE ARE CONTRARY TO THE SPIRIT OF DEMOCRATIC GOVERNMENT

Individual responsibility is the foundation of democratic government. If a nation does not educate its citizens to individual responsibility, it will soon have no one capable of assuming public responsibility. Slowly through the ages the common man has risen from chattel slavery and serfdom to independence, freedom and personal liberty, and now some well-meaning but misguided people want to undo all this. They want to enslave him again, making him in fact a bondsman of the state. Organized society is forever forging new chains with which to shackle the free development of its members.

In a period in which the population of the United States has increased ten per cent the number of persons holding civil office has increased forty per cent and the amount paid in salaries has increased one hundred and fifty per cent. Thirty years ago one person in every forty-five was in government employ while now one in every twelve is so employed.

A far-reaching innovation such as social insurance must be viewed from many angles. We must consider its effect upon the general public, the insured, the employer, and the medical and dental professions.

If we are deliberately trying to get away from the democratic form of government having a definite objective in view; and if we are reasonably certain that the goal for which we are headed is worth while and is going to result in general social and economic betterment, an experiment with social insurance might be justified, but, even then, it is well to carefully weigh and consider what the wise founders of our government had to say on this important subject. I quote from the Declaration of Independence, "Prudence, indeed, would dictate that government long established should



not be changed for light and transient reasons."

In those countries in which compulsory health insurance has had prolonged and extensive trial it actually has had serious consequences.

MOST GOVERNMENTS ARE INEFFICIENT OR CORRUPT  
SOME ARE BOTH

One of the very first questions that naturally arises is: Have any of our governmental agencies so conducted themselves in the past as to make it reasonably safe for us to entrust so stupendous a function as universal social insurance to any branch or department? Dr. Ochsner maintains that most of our local as well as state governments are inefficient or corrupt, and some are both.

We have all seen the statement repeatedly in the public press, but have never seen it successfully refuted, that in many of the political subdivisions of our country only sixty per cent of the taxes collected are effectively spent, the remainder being frittered away, wasted or stolen. This inefficiency and corruption is due to many causes of which some of the more important are:

The fact that so far no formula has been discovered according to which the most efficient, honest, industrious and worthy members of the community can be secured for public office. Nor has there been any method devised whereby spoils, politics, favoritism, pull, nepotism, waste and graft can be eliminated with even a reasonable degree of certainty. The individual who could solve these two problems would not only be the greatest benefactor of the human race but the wisest man the world has so far produced.

Inefficiency and corruption is so common that we have become callous to it. We are annoyed by it, we grumble and complain mildly about it, but we pay our ever mounting taxes if we have anything with which to pay and 'let it go at that'.

Let us study conditions in our own country a little more in detail in order to determine whether it would be wise or even safe to entrust the federal, state and local government or any one of them, with supervision over the private lives of its citizens.

The founders of our government subdivided it into three branches; the adminis-

trative, the legislative, and the judiciary. This was done on the theory that each had a distinct function to perform and that they would all act somewhat as checks and balances upon each other. This seemed logical at the time and undoubtedly has many advantages, but our founders did not and could not foresee one of its dangers and one of the abuses to which this division was to be put, namely, the practice of side-stepping duty and responsibility.

Just one typical example: Dr. Frank L. Rector recently completed a survey of penal institutions. On the day he visited the Ohio State Penitentiary, there were four thousand, four hundred seventy-five prisoners within its walls, of which one hundred fifty-six were hospitalized. There was but one physician on the staff, all other attendants at the hospital were prisoners. While the physician was nominally on a full time basis he was carrying on an outside private practice as his salary from the state was insufficient to meet his living expenses.

A close examination of legislative procedures reveals "control by minorities" and indiscriminate trading.

We come now to what is probably the weakest spot in the government—the judicial interpretation of the laws and their legal administration.

Henry Barrett Chamberlin, Operating Director of the Chicago Crime Commission, recently said: "Repeated postponements in the trial of a criminal case are the most serious obstacle in obtaining a just verdict."

In this connection Dr. Ochsner quotes a jurist who was known for his outstanding fearlessness and integrity and his profound knowledge of the law. He characterized the Municipal and Circuit Courts as the Courts of Original Error, the Appellate Courts as the Courts of Intermediate Speculation and the Supreme Court as the Court of Ultimate Conjecture.

One writer in a popular magazine sizes up the whole situation in the following words: "From Teapot Dome to our latest Municipal Court scandals we have seen enough of political and public malfeasance to believe almost anything of our law-makers, courts and public guardians."

The author addresses himself to the discussion of governmental inefficiency because he feels it is fundamental. If his claim be conceded that most governments are inefficient or corrupt and that some are both and that there is no likelihood of marked improvement in the immediate future, then he has proven that it would be unwise and unsafe to entrust so vital a function as the almost universal control of medical practice to governmental supervision and control.

The purpose of these articles, however, is not so much to give detailed information as to arouse the allied professions of medicine and dentistry and through them the general public to the impending danger.

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**\$125,000,000 SPENT ANNUALLY ON HEALING  
CULTS IN UNITED STATES**

Approximately \$125,000,000 annually, equivalent to 12 per cent of the amount spent on the 142,000 doctors of medicine, is expended in the United States on 36,150 other practitioners who hold themselves out to treat the sick—osteopaths, chiropractors, naturopaths and allied healers, and Christian Science and New Thought practitioners—according to Louis S. Reed, Ph.D., in a report presented to the Committee on the Costs of Medical Care.

Present legislation designed to protect the public from unqualified practitioners is not accomplishing its purpose, according to the report, for, although it maintains high standards for doctors of medicine, it sanctions the existence on a lower plane of qualifications of thousands of poorly trained practitioners. The use of any therapeutic measures by untrained or poorly trained individuals, unable to diagnose disease and unaware of their limitations, is unsound, dangerous and wasteful, no matter how sound those measures may be, Mr. Reed said.

The report stated that, while religious healing is able to accomplish beneficial results in some conditions, it may be harmful when practiced by those unable to diagnose disease, especially when it is held that disease is an illusion.

Mr. Reed's report, "The Healing Cults," published by the University of Chicago Press, is the sixteenth study completed by the Committee on the Costs of Medical Care

which, on November 29th, will issue its final report with recommendations based on its exhaustive five-year study of the problem of "the delivery of adequate, scientific medical service to all the people, rich and poor, at a cost which can be reasonably met by them in their respective stations in life."

As a result of his exhaustive study, Mr. Reed estimated that the people of the United States annually spend \$42,000,000 for the services of the nation's 7,650 osteopaths; \$63,000,000 on 16,000 chiropractors; \$10,000,000 on 2,500 naturopaths and allied groups; and another \$10,000,000 on the 10,000 Christian Science and New Thought healers.

A study of 7,800 representative families revealed that only 52 families considered healers in these cults as their family practitioners. Only 1.3 per cent of the families having medical care during the year used them exclusively, although 10 per cent resorted to healing cult practitioners at one time or another.

The report traces the development and history of the various cults and contains descriptions of the schools, ideas and legal status of each group. It points out the similarity in the origin of many of the cults, in that originally their treatments were "cure-alls" based on all-inclusive theories of the cause of disease. Modification of such theories and the elevation of professional and educational standards gradually leads the cult to improve in training and diminish in number and eventually to be assimilated into the general body of regular medical practitioners, according to the report.

Mr. Reed pointed out the following ways in which the situation with regard to the healing cults can be improved:

The lay community's stock of knowledge regarding the human body and its functioning must be enlarged and more widely disseminated. As a result, for each succeeding generation, the limits within which credulity exists and unscientific practitioners can operate will be narrowed.

The passage by more states of basic science laws may be expected to cut down the inflow of poorly trained practitioners. These laws, already in existence in some states, require that all applicants for licenses to practice any branch of the healing art must first pass an examination in the basic sciences.



## MERCK & CO. ERECT RESEARCH LABORATORY



Ground was recently broken for the erection of a research laboratory building at the works of Merck & Co. Inc. at Rahway, N. J. The project has been under consideration for some time. George W. Merck, president of the Company, brought it to the attention of the stockholders a year ago. The directors have authorized proceeding with the work at this time, moved by the consideration that it will provide increased employment and that the facilities are urgently needed. The research activities of the Company are at present being carried on in various parts of the large Merck plant—in many cases in make-shift quarters.

The building will be a Colonial type, brick structure, with a central section 40 ft. by 80 ft., of two stories and basement. On each end of this central section will be two one-story wings, 50 ft. by 100 ft. The wings will be connected with the central section by two one-story units, 10 ft. by 38 ft.

The south wing will be devoted to carrying on pure or fundamental research, for which three laboratories will be provided. Another laboratory will be fitted for bio-chemical research, and there will be an adjoining incubator room containing a sterilizer, incubator, and other necessary equipment. In a pharmacological laboratory the physiological action of various chemicals will be investigated. Adjoining each of the laboratories will be offices for the chemists and pharmacologists in this section. There will also be a laboratory for micro-analysis, a micro-balance room, an ordinary balance room and an ice-room.

The north wing will contain a large chemical laboratory, 50 ft. by 50 ft., suitable for twelve chemists carrying on applied research and development work. In this wing provision will also be made for carrying on studies on small scale plant operations—the step between research laboratory and factory.

The central section will contain on the first floor the offices and private laboratories of the research directors. In addition, there will be an optical and a physical laboratory; and a laboratory in which research will be carried out on the containers used for various chemicals.

Here also will be located the library, which will be an outstanding feature of the building. The

ceiling runs up into the peak of the roof, giving full height for the stacks of books, which will also be carried into the attic spaces made available for this purpose. The arrangement of the library will provide for work tables and complete files of technical literature from all over the world. The work of the librarian and abstractors will be carried on in adjacent locations. The Patent Department offices will also be located on the second floor.

The basement of this section will contain a constant temperature and humidity room, a dark room, a combustion analysis laboratory, a glass-blowing room, and a carpenter shop. Provision has been made also for a chemical and glass-ware storeroom, a machine room and a battery room.

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